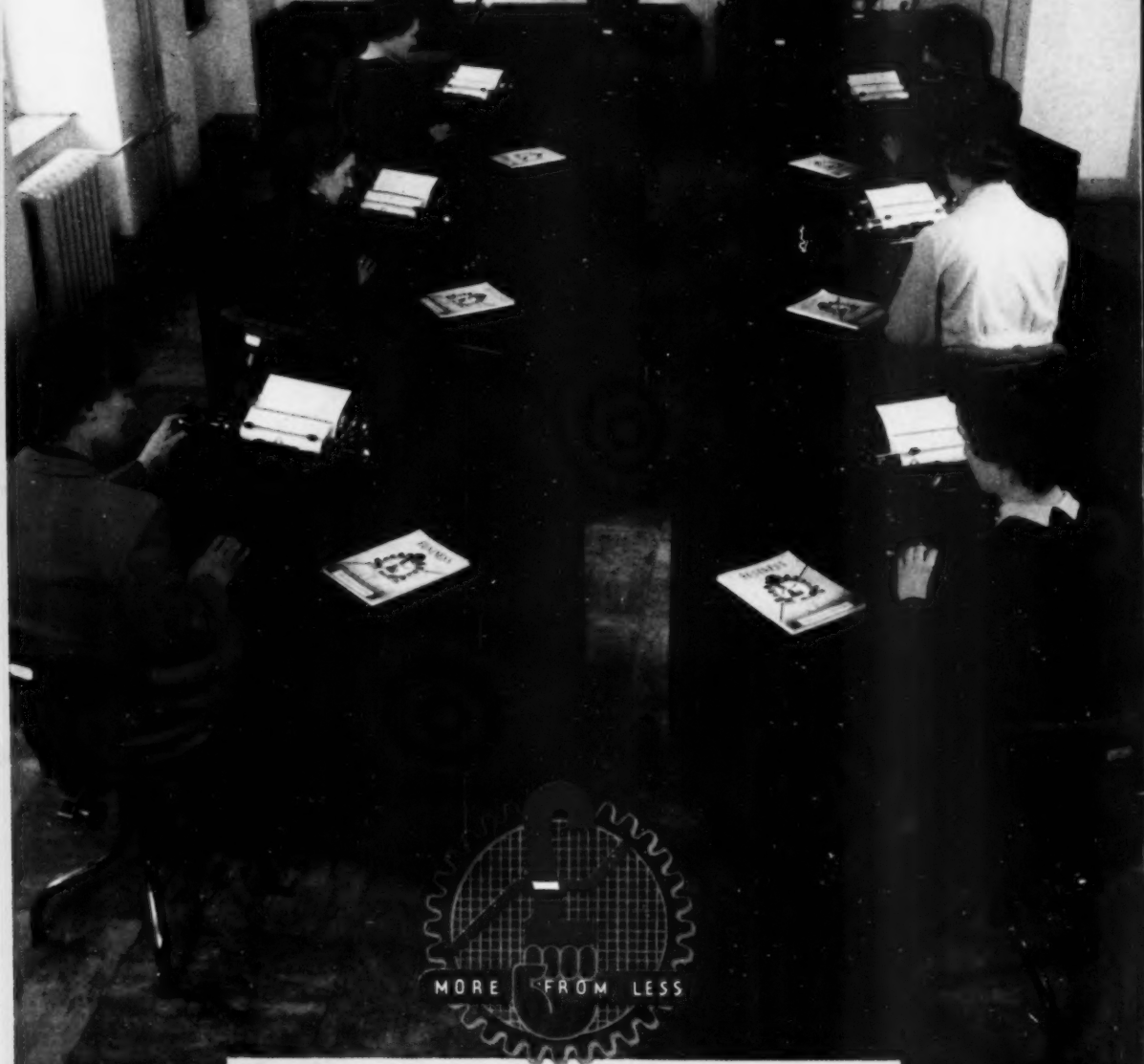
June 19[illegible]

2/- Monthly

BUSINESS

The Journal of Management and Industry



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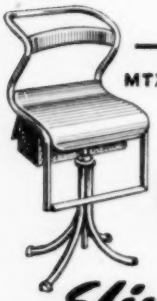
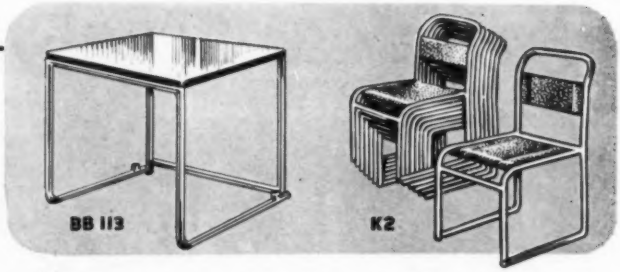
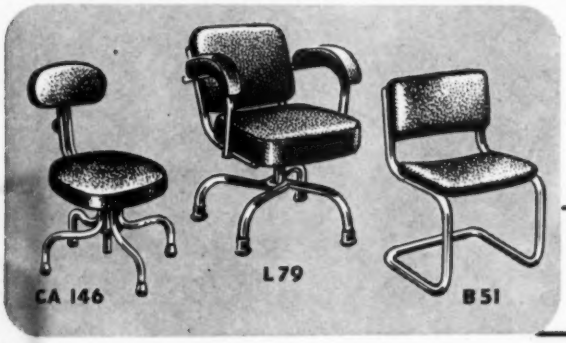


du-al



Eliminates the "Four o'clock Droop"



You will find, as have many leading industrial organisations that it will pay to investigate and install "Du-al" chairs and tables for your offices, factory and canteen.

"Du-al" furniture is comfortable in use, versatile in its variety of colours, materials and finishes, designed and styled to harmonise with almost any type of interior.

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Of course the people who make consumer goods do. The soap kings. The cosmetic queens. The shoemakers and watchmakers.

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The cine camera mostly used for these sales promotion films, which are frequently made by a staff man, is the world-famous Bolex.

The Bolex cine camera is a Swiss precision built instrument also used in industry for motion study work, training films and research of many kinds.

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Drawn by A. R. THOMSON, R.A.

Backroom Boy with a bucksaw

Although his name never appears Halloran is one of the most important contributors to the newspapers. In fact, it is on his bucksaw that the publication of the newspaper depends. For Barney Halloran* is a Newfoundland logger, on the pay roll of the largest paper mill in the world — Bowater's at Corner Brook. His job is to fell and cut the trees into four foot logs, using the length of his bucksaw as a measure. They are then ready for the journey to Corner Brook by sleigh, truck, train, ship or most usual of all, floating down by river, there to be pulped and processed into newsprint. Halloran stands five foot eleven in his socks, and weighs 200 pounds, according to the Medical Officer who runs the foot rule over every logger at the start of the season. According to the camp cook, his appetite is built in proportion! "He'd eat a cow between two biscuits." But Barney just smiles tolerantly, knowing that a logger without an appetite is as useless as an axe without a handle.

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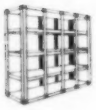
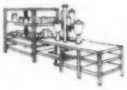


STORES - need new rack - very urgent!



CANTEEN - new kitchen counter - priority!

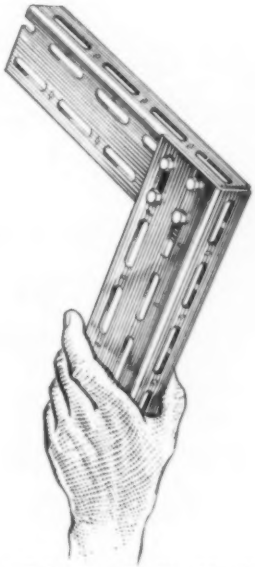
ASSEMBLY - want benches - workers starting to-morrow!

TOOL ROOM - must have stand for new machine-rush!

PRESS SHOP - new machine guard needed - production stopped!

ANY CONSTRUCTION - any shape - any size - any time - RUSH!

1 easy answer!



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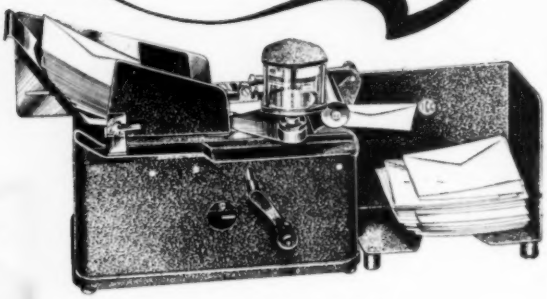

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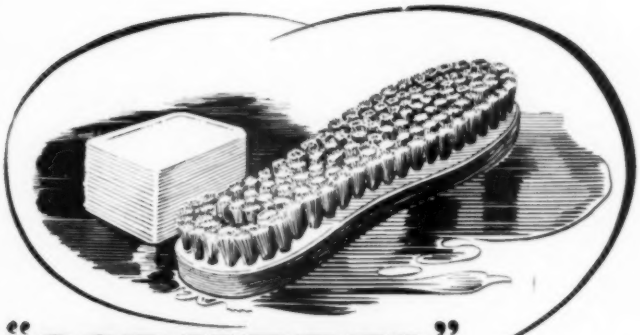

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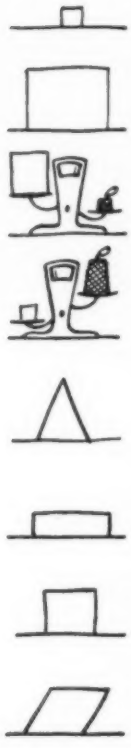

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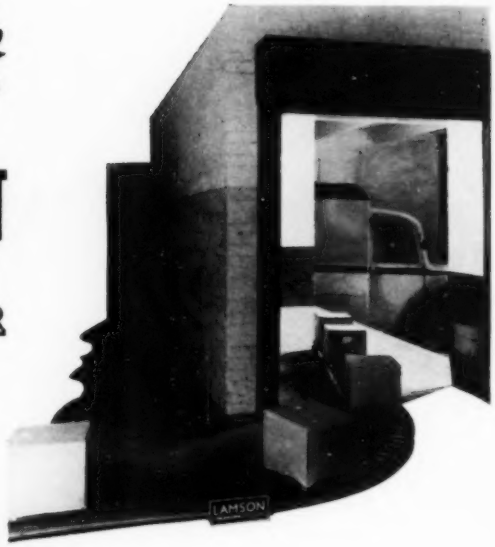

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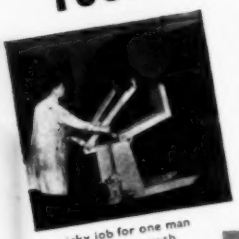

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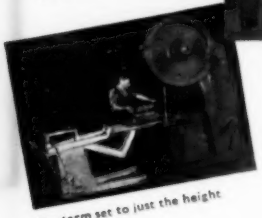

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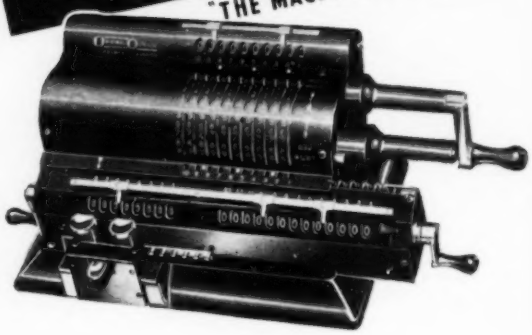

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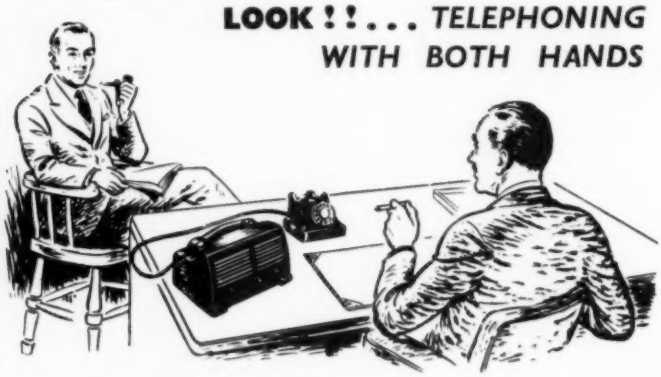

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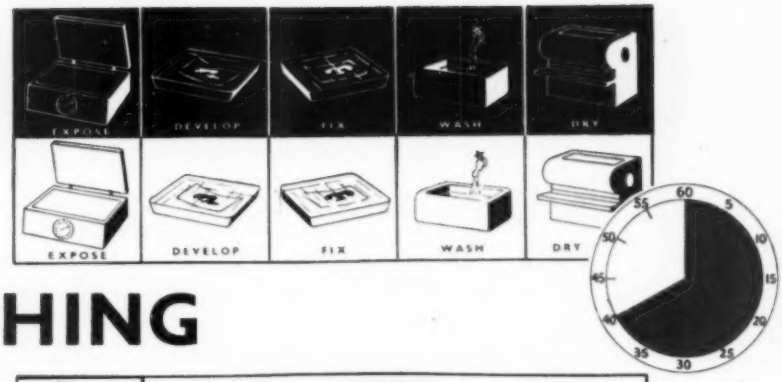

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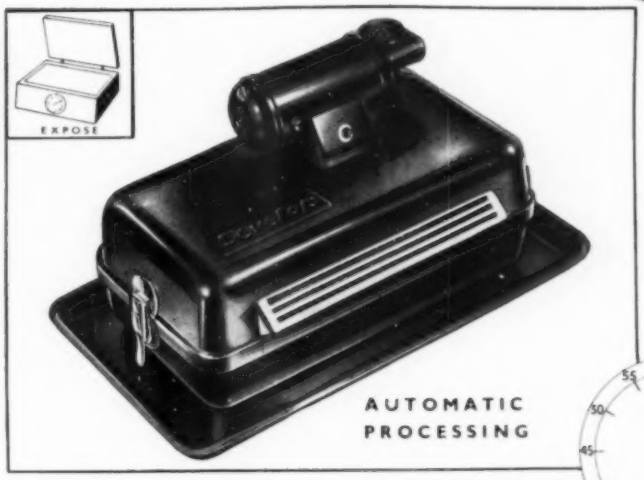

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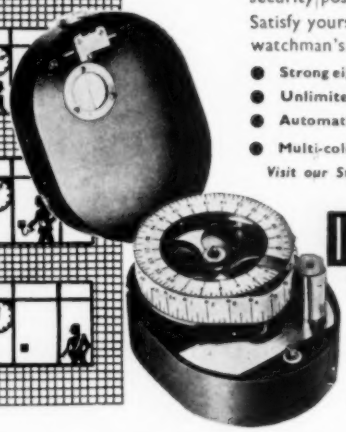

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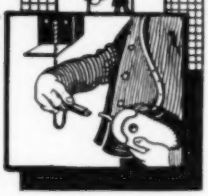

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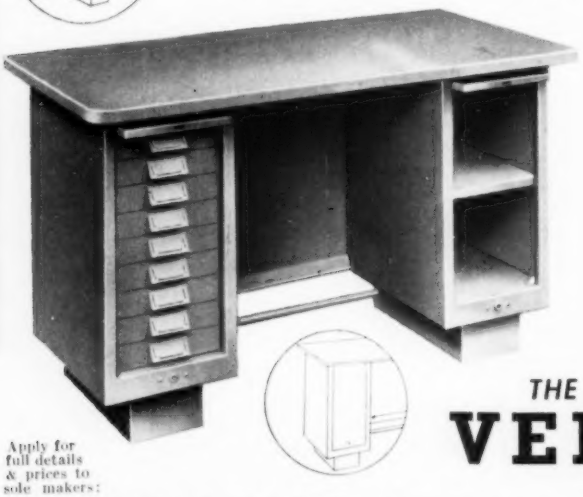

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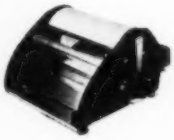

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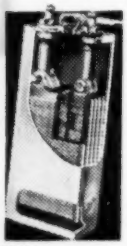

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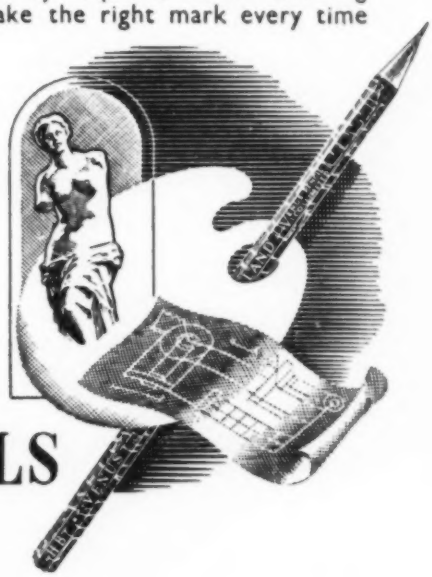

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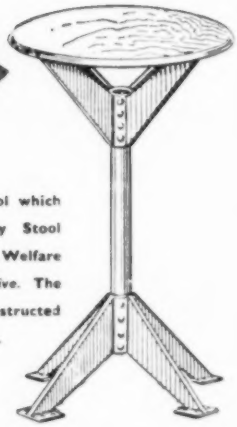

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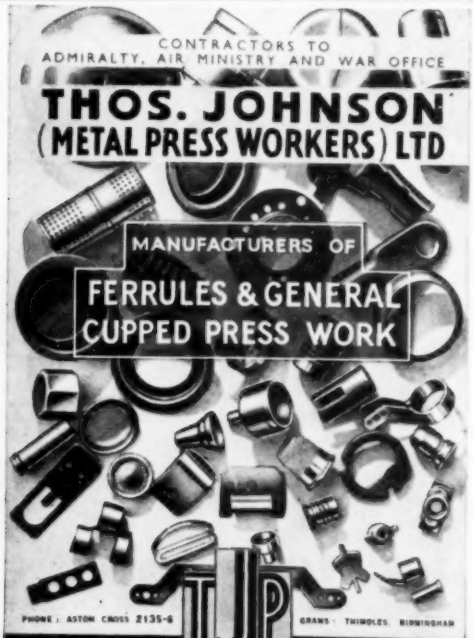

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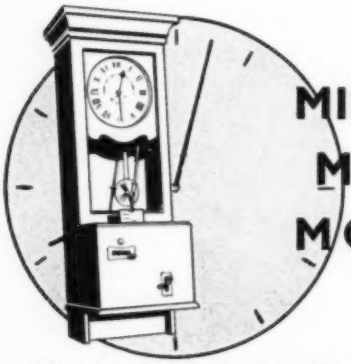

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The Journal of Management in Industry

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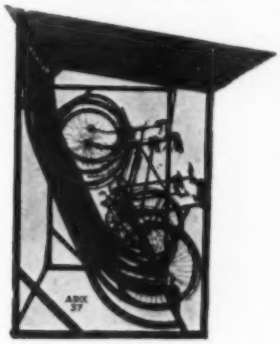

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The MARCH of BUSINESS

THE B.E.E. AT OLYMPIA

THE Business Efficiency Exhibition, which will be opened at Olympia on June 6th by the Lord Mayor of London, is the largest of its kind ever staged in this country and probably in the world.

As in previous years, BUSINESS celebrates the occasion with a special issue that includes a 100 page survey of the exhibits, classified according to their function, a series of indexes even more comprehensive than in previous years, a list of the exhibits by makers, by function and—a new service—by trade name. Thus, with BUSINESS as a guide, the visitor to Olympia will find his way without difficulty to those stands in which he is primarily interested, while the issue will remain as a permanent reference book until the next exhibition.

BUSINESS will have its own stand at the exhibition (No. 91A), where enquiries will be dealt with on the spot.

The cover photograph, specially taken for BUSINESS by McLeish & Macaulay, was arranged in the London offices of Brown & Polson Ltd.

* * *

IN the October, 1950, issue of BUSINESS, *a survey of air freight suggested that, when all costs were taken into account, carriage by air might well prove as inexpensive as sea transport. The point has recently been emphasized by A. Wander, Ltd., manufacturers of "Ovaltine."*

"Ovaltine" for Australasia and the Far East is produced by an Australian associate company at a factory in Tasmania. Cans were shipped from Melbourne to Tasmania, filled and returned—again by sea. In July, 1950, the company went over to air transport in order to secure more regular deliveries in face of disorganized shipping. After six months' trial, they found that the extra cost for air transport amounted to less than 0.01d. per can—a small charge to pay for regular deliveries and unbroken production.

* * *

JOB EVALUATION

"JOB evaluation spotlights management inefficiencies, particularly supervisory inefficiencies on the shop floor. It compels one to examine the training systems in use. To be effective, it absorbs any existing 'merit' bonuses, conditions, and other special grants; in short, it rationalises plus rates. The job analysis engineer evaluates the job, not the man, and compels study of the individual's fitness for each or any task; employment procedures and job specifications should therefore improve selection. In grading the jobs in one's factory, one automatically sets up a promotion ladder, and competition for the higher-graded jobs arises naturally." So said Brigadier N. F. Patterson, general manager, production division, Monsanto Chemicals Ltd., in answer to the question arising from a paper on wages payment systems based on job analysis, read to the national conference of the Institution of Works Managers at Stockport.

Waclaw Rodziewicz at the Wolverhampton factory of the Goodyear Tyre & Rubber Company uses an abacus to check production control.

Various methods of using job analysis as a basis for wage payment have yet to be fully developed. Quite common, however, is the points bonus system of payment; but there are opportunities for allying job evaluation with group bonus schemes, profit-sharing schemes and the like.

Job analysis represents an attempt to relate the reward to the mental and physical effort required. This object can be weighted by varying the reward according to the group output in conditions where direct incentives are impracticable.

* * *

MR. Arthur Pateman, M.I. Mech.E., managing director of the Imperial Typewriter Co., Ltd., of Leicester, has been elected a patron of the Typewriter (and allied) Trades Federation. This honour has only once before been awarded. Mr. Pateman has been with Imperial for well over 40 years; he joined the original Moya company in 1904. The Imperial company joined the T.T.F. in 1931 and Mr. Pateman was elected to the council in 1934. He was president from 1943 to 1946.

* * *

DE-SKILLING THE OFFICE

READER reaction to the Anglo-U.S. Productivity Council team's report on management accounting has—as with other reports—gone in two directions. One section has said, "It is all right for Americans but it won't work here." Another has said, "But we have been doing it for years."

That both sections are, within limits, right, was demonstrated by Mr. Ian T. Morrow, leader of the management accounting team,

12

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when he described some of his own previous experiences in this country to the National Conference of the Office Management Association at Bournemouth recently.

Shortly after he was qualified, Mr. Morrow revealed, he was appointed assistant accountant and, in fact, office manager, to a textile combine. The company at this time had decided to move its administrative headquarters from London to its principal mills in the North. Mr. Morrow's task was to build around three or four key personnel an office of about 60 people in a small town which had no great reservoir of trained people. It meant, in fact, that a great many young people were taken on and that, for some time, the office was chronically short of staff. The company had already mechanized the office to a high degree The problem of attracting people to the company was tackled, firstly by making the office physically attractive by painting and good lighting, and secondly, by putting all the workers in one large office.

Because of the inexperience of the new workers, routines on the different sections—cash, purchase ledger, sales ledger and costs—were simplified so that these untrained people could do them. Each individual was trained to carry out two or more of these simple routines, one of them preferably in a section other than that in which he or she normally worked.

* * *

INTERVIEW TECHNIQUE

IT was decided that the only way in which this raw material could be built up into a trained staff would be to see that they were getting training in their spare time. Mr. Morrow therefore set about interviewing privately every single member of the staff. He enquired as to their ambitions and what they were doing to fit themselves for these, whether they liked their job and, if not, whether anything could be done to put it right. He asked about their habits and as much as he dared about their personal inclination. These interviews developed into a very friendly informal discussion and he tried to get the workers into taking specified classes at the local tech-

SALIENT FIGURES OF THE MONTH

	Latest Month	Increase (+) or Decrease (—) on a Month Ago	Year Ago
"BUSINESS" INDICES			
Production (1946=100)	* 141.7	+ 0.9	+ 10.9
Purchasing Power do.	* 108.9	— 1.7	+ 0.7
MANPOWER			
Total manufacturing industries .. .. (thousands)	* 8,670	+ 11	+ 254
Cotton spinning and weaving do.	* 334.4	— 0.5	+ 11.4
Coal (on colliery books) .. do.	702	+ 4	— 2
Reg. unemployed (U. K.) .. do.	305.4	— 29.5	— 72.1
PRODUCTION			
Index of production (1946=100)	* 150	+ 9	+ 10
Coal (average weekly output) .. (thousand tons)	4,243	— 274	—144
Steel ingots and castings (do.) do.	318	— 8	— 12
Cotton yarn (do.) .. (million lb.)	* 17.11	+ 1.18	+ 0.13
Woven wool fabrics (do.) (million linear yards)	* 37.20	+ 0.31	— 4.53
Passenger cars (do.) (thousands)	* 10.10	— 0.40	— 0.07
Commercial vehicles (do.) .. do.	* 5.66	+ 0.19	+ 0.50
Permanent houses completed .. .. .. do.	* 13.98	+ 0.83	— 0.09
TRADE			
Value of imports (£ millions)	† 303.4	+ 0.3	+ 92.0
Value of exports .. .. do.	† 207.6	+ 17.5	+ 57.7
Freight train traffic (million tons)	§ 5.58	— 0.07	— 0.13
Retail sales .. .. (1947=100)	153	+ 12	+ 20
FINANCE			
Currency in circulation (£ m.)	1,278	+ 16	+ 37
Deposits in London Clearing Banks .. do.	6,037	— 4	+ 254
Provincial cheque clearings (av. working day) .. do.	8.26	+ 0.27	+ 2.11
WAGES AND PRICES			
Weekly wage rates (1947=100)	117	+ 1	+ 7
Retail prices (1947=100)	† 121	+ 2	+ 7
Wholesale prices (1930=100)	† 318.5	+ 4.9	+ 63.9
Basic materials do.	Temporarily suspended		
Intermediate do.	† 386.1	— 1.6	+ 108.2
Manufactures do.	† 259.4	+ 2.9	+ 31.0
Import prices (1950=100)	† 136	+ 8	+ 40
Export prices (1950=100)	† 115	+ 3	+ 17

* February, 1951. † April, 1951. § Four weeks to March, 25 1951
All other figures refer to March, 1951.

How to cut absenteeism

The main cause of lost time in industry, according to the Medical Research Council, is sickness absence. Much of this absenteeism can be traced to the transmission of contagious ailments through the use of communal towels.

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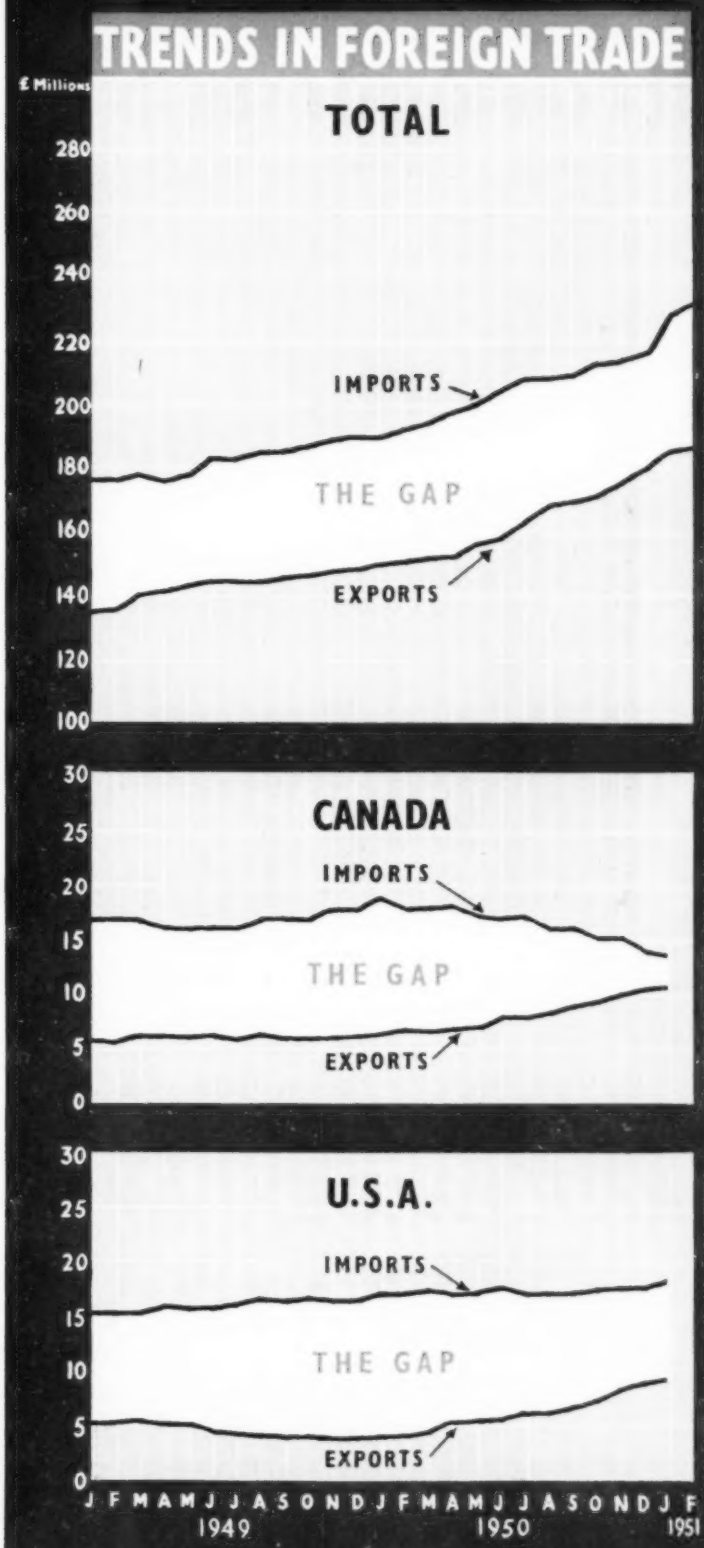
nical college or, alternatively, arranged for special training with one of the office machinery appliance companies.

The interviews were duplicated at six-monthly intervals, when he checked whether workers had taken the classes they said they were going to take, how they were progressing and what was their general reaction to the office and to their particular job and supervisor. At this second interview the clerks were informed of their increases in pay, or if they were not getting any, the reason why. The first series of interviews had to be done over three days and at the end of the first day there was a good deal of antagonism. By the end of the second day, however, members were wondering when their turn was coming. The announcement of the increases may have had something to do with their enthusiasm.

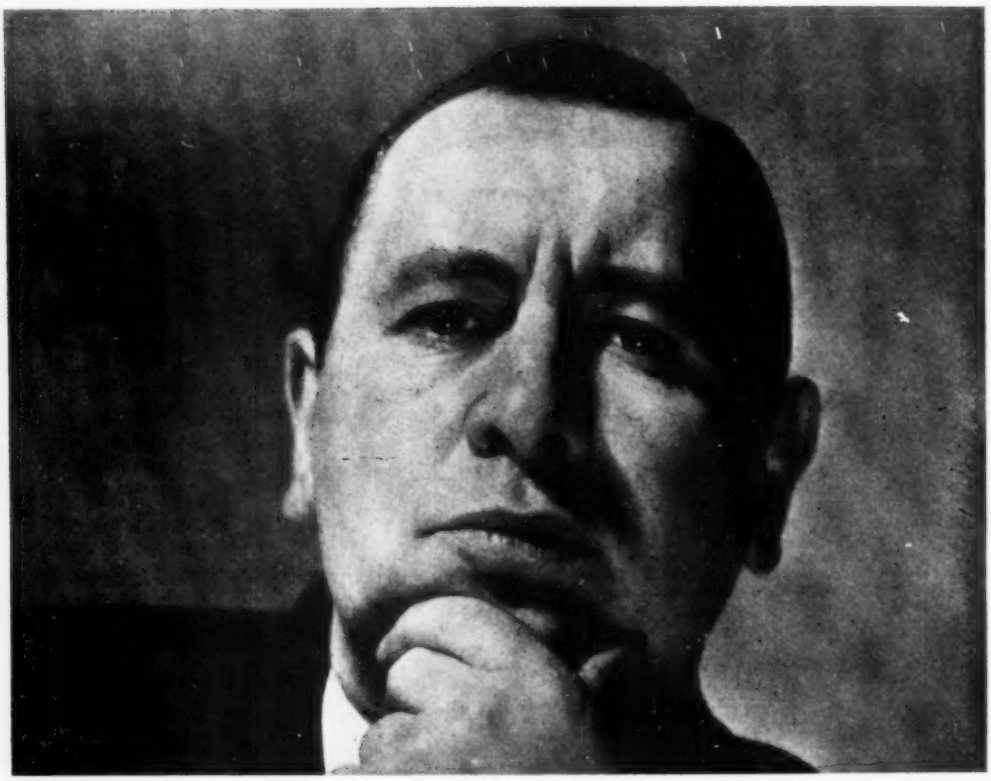
The net result of this approach was that the office employee consisted of two types. One, the few experienced section heads who had been brought up from London or imported, and two, a large bulk of semi-skilled people who fairly rapidly acquired considerable training. Because they were able to do several different simple jobs, the clerks could be moved from one section to another so that periods of low activity were avoided. It was found that they were very keen to swing about and get some variety into their work, to such an extent that when they had finished a particular task they asked if they could go and help so-and-so to do something else.

HOW THE CHART IS CALCULATED

The chart shows the developments over the last two years in imports and exports as given in the official Board of Trade returns for (a) the United Kingdom as a whole, (b) for trade between the United Kingdom and Canada, and (c) for trade between the United Kingdom and the United States.



If I could only see through a brick wall



I ought to be down at the factory to see why that new contract is held up. But I want to attend the sales conference to see how the new reps. are progressing. And I really should look in at Purchase Control to see if it is up to date. Smith was saying at the club lunch that Roneo had installed some very clever charts for him. These showed him every fact and situation he wanted to see and he had now got everything under control. It might be worth while to ask Roneo to tell me more about them.

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BUSINESS
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By introducing planned yearly targets in every department for saving materials, and by checking performance against these targets week by week on charts shown to all executives down to foreman level, the Dunlop Rubber Co. Ltd. have managed to reduce their waste by 50 per cent. in five years.

Building management control round waste prevention

By BRIAN CUMMINGS

MOST businessmen keep a fairly sharp eye on the more obvious sources of waste in their business. The amount of scrap produced, the percentage of output rejected by the inspection departments, are natural indications of the efficiency of the business.

But in normal circumstances further investigation into the more general ways in which waste can arise tends to be sporadic. A financial crisis may lead to an economy campaign (though even then economies tend to be indiscriminate) or a sudden shortage of some raw material or component may set off a hurried investigation into ways and means of reducing consumption of the material concerned.

Waste prevention, however, is not (or should not be) limited to periods of crisis. It is an integral part of business efficiency and, given its proper emphasis, is a prosperous pursuit.

Such has been the experience, for instance, of Mr. W. W. Foster, general works manager of the Dunlop Rubber Company, Ltd. It is not perhaps too much to say that he has deliberately used the prevention of waste as the cardinal principle behind his management policy. With others he is in full agreement with the need for high productivity but Mr. Foster has put his emphasis on the need for avoiding losses of all kinds. He has done so as a psychological approach to the problem of getting his workers interested in their jobs and in the activities of the works as a whole.

Appeals for greater output, he feels, are usually so abstract that they do not reach the foreman or the man on the shop floor with the necessary degree and sense of importance. But the man at the machine can and does see every day the waste that is going on around him, and can assess it in concrete terms of money lost. An appeal to him to reduce this loss, backed with firm evidence of management's intention to give him every help will mean more to him than any argument in purely general terms.

It is this switch from the abstract to the concrete that is Mr. Foster's secret. He has built up an elaborate organization of check and cross-check on the consumption of all raw materials and services, but he himself is the first to stress that such a sytsem cannot produce results without the co-operation of every man in the establishment.

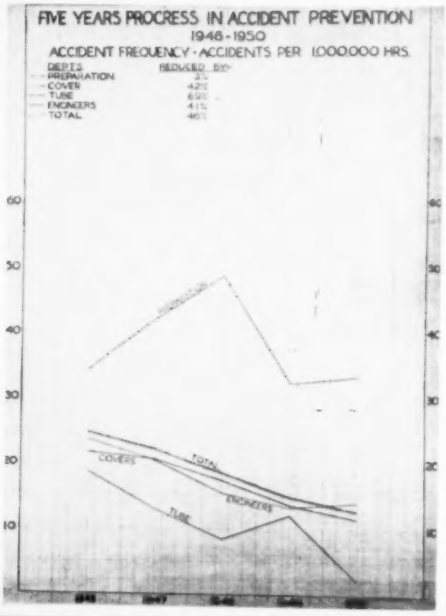
"I have put my waste into three categories," he said. "Firstly, waste materials, secondly waste effort and thirdly waste time. We have tackled waste materials by the introduction of a material control department for many years, by controlling the weight of component parts, but have now added considerably to this by embracing larger fields with more charts and by keeping everybody—particularly foremen — well informed about what we are getting and where we think they ought to be from the point of view of production and avoiding waste.

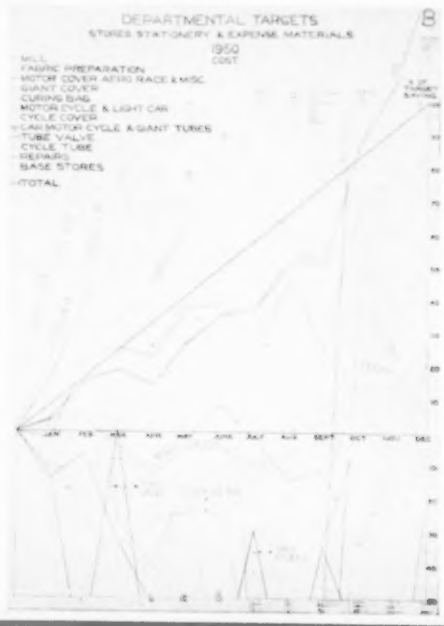
"Waste effort brings the equipment engineers into the picture. It often occurs because you have not had the opportunity or taken the trouble to provide the proper plant. It brings out the necessity for more mechanization and automaticity of machines.

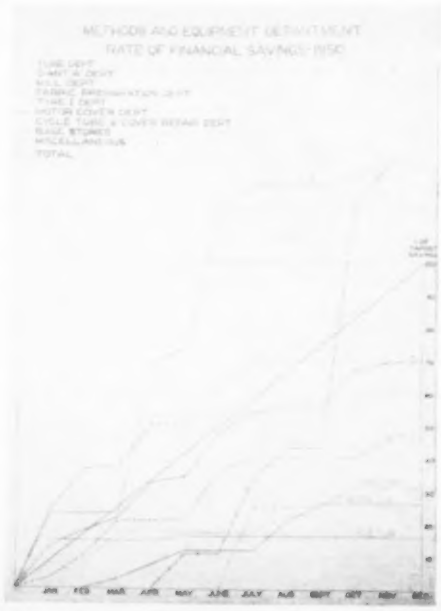
"Waste time I allocate to everybody as their own particular responsibility."

The results achieved during the post-war years that this campaign

THESE CHARTS GIVE MANAGERIAL CONTROL, CUT WASTE







has been in progress are considerable. In a firm that was already at a high stage of efficiency, the amount of waste has been reduced by 50 per cent. in five years and the effect has been felt in every department.

The material economy department, primarily designed to establish tolerances in regard to all components, is in charge of a senior official directly responsible to Mr. Foster. Its personnel spend their time walking round the various departments, keeping an eye on standards. They constantly take spot checks of the product at various stages of manufacture and weigh a sample (or otherwise test it) to see that it is within the tolerances allowed. Any deviation is immediately taken up with the foreman of the department.

Keeping a Check on Scrap Production

If a particular machine or process is not going to specification it is the checker's responsibility to see why this is so and what remedy can be applied. He has no executive responsibility, but gets the technicians and executives concerned to work together to remedy the fault. If (as very rarely occurs) nothing can be done at this level, he takes it to the departmental manager concerned.

In addition, any foreman or departmental manager who feels that his scrap is soaring in spite of his efforts can ask for the help of a technician from the material economy department, who studies the job over a period, perhaps of days or even weeks, and then makes whatever recommendations he feels will fit the case, to the man who called him in. It is an important feature of the material economy section that all reports go direct to the foreman or departmental executive and not in the first place to the general works manager. This fact has successfully conquered any reluctance that the departmental managers may have felt in using this service.

In addition to the personnel of the material economy section, who wander freely from department to department, there is another section of men who stay on the shop floor. These men are, for the main part, older foremen who can call on a vast fund of experience. They see what the operators put out or tear off as scrap and take up questions with the foremen on the job in order to get proper control.

These sections act independently though in liaison with the normal production control operators. Standard routine tests on quality control lines are made by the technical department at every stage in the production of tyres and other products. Normal statistical control charts are kept, together with charts showing the frequency curve of deviations from the average performance. Close limits, in terms of weight, are set for tyres, and of specific gravity in the case of mixing powders, carbon black, etc. There is also a vulcanizing test and a tyre fabric test. Thus rubber and fabric are checked before they go any further in the factory and any unsatisfactory material is rejected before additional costs are incurred in manufacturing finished products from it.

Wasted effort is saved through the activities of the engineering department, which is divided into four sections. The first is concerned purely with minor details such as the adjustment of machines and the provision of gadgets to assist operators in using them. The second tackles work on an intermediary scale and the third devotes its attention to larger scale capital equipment within the existing methods of production. The fourth is a research and development section which explores possibilities in new machines and processes that may take years to develop.

The activities of these departments necessarily involve capital expenditure and this is rigidly controlled by a system of sanctions. The local factory is empowered to issue sanctions up to a limited amount, but all higher sums must be sanctioned by head office. Every application for sanction for capital expenditure must give an estimated figure showing both the amount of expenditure and the amount of money that will be saved by the investment. These figures are both calculated by the time study and standard cost department and the records have shown them to be extremely correct. Management can thus assess in concrete terms the exact effect of any proposed expenditure.

Fixing Targets For Improved Performance

The activities of all these departments have over the years produced a mass of statistical data which, taken together with the normal figures of production, consumption of raw material and labour costs, can and do give the management a very clear idea of just what can be achieved in reducing losses in any particular aspect. Thus, towards the end of every year, Mr. Foster gets his departmental managers together and, on the basis of past experience, hammers out with them targets to be achieved over the next year in each department. The figures are agreed and no manager is asked to accept any target which he does not consider he can achieve in that particular year. Departmental targets are then broken down section by section. These targets remain unchanged throughout the year, no matter what happens, and form the basis of a series of charts which are prepared and maintained by the planning department. A separate chart covers each aspect of material saving and shows what percentage of the agreed target of saving is achieved as the year progresses.

For the methods department, a detailed list of all improvements that it is proposed to make during the year is made out, section by section, with the estimated total saving expected from them. This represents the target against which actual performance is charted.

The method of charting has two

This machine (left) for continuously weighing rubbered tyre fabric during process saved 2½ per cent. in rubber consumption.

advantages. In the first place, it appeals to each individual's sense of achievement. Secondly, it enables a direct comparison to be made between different departments engaged on wholly different work. Thus, a workman in the engineering department, without knowing anything of rubber technology, can immediately contrast the performance of the rubber department and of his own and of others and so gains a view of the factory as a whole.

The charts that Mr. Foster keeps—some 60 or 70 of them—fall into three series. The first shows, in terms of units produced, the production of the whole plant and of each of the eight departments as compared with scheduled output. It thus gives a clear and immediate indication of the performance of each department.

The second series covers all engineering services—coal, electricity, steam and air—and charts the consumption of these per lb. of product produced in each department. They show (1) fuel consumption targets at Fort Dunlop; (2) production against coal, electricity, etc.; (3) cost and usage of coal, electricity, etc.; (4) cost and usage of electricity; (5) output against electricity, steam, water, high pressure air, low pressure air, high pressure hydraulic and low pressure hydraulic; (6) national output and consumption of coal and electricity; (7) the factory load of electricity. These give an indication of the efficiency of the operation of the plant.

Removable insulating hoods on these vulcanizing presses saved 7½ per cent. of steam consumption.

The third series of charts—perhaps the most important—covers the performance of the plant as a whole and of each of the eight departments (car covers, tractor covers, giant covers, mixed rubber, cycle covers, motor cycle covers, cycle tubes and other tubes) against the targets for improvement set for the departmental managers. Each chart takes the form of a triangle. To achieve the target the performance must follow the diagonal from 0 on January 1st to 100 on December 31st. The variation from this line is an indication of how far performance in improvement is exceeding or falling behind planned improvement. To add a further basis of comparison, the relevant figures for the previous year are marked in by crosses.

The items covered by these charts vary from time to time, according to the importance placed on the subject by management. The amount of saving that can be obtained will vary from department to department, and in one department from year to year One of the outstanding merits which Mr. Foster would claim for this system is that it enables him to concentrate his efforts on those departments where large savings are possible and to allow departments which have already reached something like the peak of their efficiency to run themselves and maintain the levels reached.

The targets for avoiding waste will thus show many factors, including transport costs, stores items (including such things as office equipment and stationery as well as waste fabric and rubber), manufacturing time, production costs, labour costs, repair costs, maintenance, labour turnover, external transport and other factors.

Targets for manufacturing time and production costs are calculated by bringing everything down to a standard 100 minutes of work. Costs are split up into equivalent units such as direct labour, indirect labour, power, steam, water and maintenance. All figures are approved by the time study and costs department before going on to the chart. Other charts show the number of suggestions received,

accidents by frequency and severity, and absenteeism. There are a few charts kept covering economic data, such as total national output of coal and electricity, which have no direct relation to activities at Fort Dunlop; these are used by Mr. Foster at foremen's and other meetings to underline the necessity for economizing in the consumption of fuel.

The charts, which are big enough to be mounted on an easel, are normally kept in the general works manager's office, where they are kept up to date by the responsible department. But they are used extensively by Mr. Foster to maintain his contacts with his executives and even down to foreman level

As soon as the charts are made up for the month, a meeting is held with the production superintendent and the departmental managers, and the charts are gone through rapidly until one throws up some difficulty that is being encountered. This is then discussed fully before further charts are inspected, which again may bring up some further matter for discussion. The charts indeed act almost as an agenda to the meeting

In addition, the chief planner has a weekly meeting with the secretary of the joint works council, the secretaries of the foremen's councils for rubber and engineering, the secretary of the staff council, the production superintendent, the personnel officer, the employment officer and the general works manager. The chief planner takes the meeting and shows them issues, production and stocks of everything made in the factory. One result of this is that the representatives themselves see if and when overtime is necessary.

Once a month the production superintendent calls a meeting of all foremen (in groups of 50 or 60) and goes through the charts, using them both as a text on which to elaborate anything that he wishes to get over to the foremen and as an illustration of his thesis. The foremen, too, may and do raise any point arising out of the charts.

The results achieved over the past five years by this system are unhesitatingly characterized by Mr. Foster as the best he has achieved during his whole industrial career.

In the first place, there are the very considerable savings achieved in materials and manufacturing costs, through the elimination of some 50 per cent. of waste. The targets for planned improvement have been steadily achieved year after year.

But in 1950 the target for improvement of manufacturing time for both direct and indirect labour was exceeded by 10 per cent., while the total target for all improvements was exceeded by 12 per cent. In one year alone about £10,000 was saved in stores, stationery and other expensive materials, simply by watching things and by having a target for improvement. On external transport eight per cent. of total costs were saved by avoiding waiting time for lorries, demurrage and railway trucks, etc., by taking more care with journey schedules and planning the time needed for men to load and unload. Additional lagging saved a further seven per cent. on steam consumption and made the shops more comfortable to work in.

The system, however, has brought additional benefits that cannot be measured directly in terms of cash. The regular flow of information has made a day to day control of activities by all executives very much easier and in Mr. Foster's words, "The charts form a system of control in themselves."

Perhaps the most important improvement, however, lies in the field of labour relations. It is only too easy, particularly in a large concern, for the man at the top to become isolated from his subordinates. By fostering the extensive use of these charts at regular meetings at all levels right down to foremen, Mr. Foster feels that he has solved the problem of keeping in contact with what is happening in the works and, at the same time, of giving all his workers a solid background against which to place their own effort.

"To my mind this is all psychological," he says. "I think you can get people interested in their jobs, particularly if you give them help. They all come into the picture and make their contributions, which are invaluable."

By using charts, Dunlop's top management keeps foremen in the picture at regular monthly meetings.

A family business grows up

By PHILIP F. DYER

In fifty years, Kenneth Macomb Chance has nursed a small moribund concern through many vicissitudes to become the keystone of the British Industrial Plastics group, and the largest manufacturer of amino plastics in the world. Yet, in spite of the rapid expansion of the last fifteen years, Kenneth Chance has succeeded in maintaining the close personal link between management and men that is the characteristic of the family business.

Kenneth Macomb Chance, Chairman British Industrial Plastics Group.

TO the student of the business scene, the family business is a fascinating problem. Just how many businesses in Britain today may be considered "family" concerns is uncertain—but the percentage, particularly among the smaller firms, must be considerable.

The picture, too, is constantly changing, under the constant pressure of competition and changing social conditions. Many family businesses never live up to the promise of their founder—the Lancashire tag, "clogs to clogs in three generations," is based on shrewd observation and bitter experience. Others—the little shops in small market towns with the words "established 1840" on their shabby fascias — remain static. Others prosper and expand until they reach a critical limit; the altered conditions brought by increased size prove to be beyond the capacity of the new generation, and a series of crises precipitates a re-organization that passes control into the hands of strangers. Only a few reach and maintain a standard that combines financial success with a continuity of family control. Only a few—but enough to show that it can be done.

The question remains—how can it be done? What have the Frys, the Cadburys, the Rowntrees, the Rockefellers, the Guinnesses, the Fords got that enables them to become the aristocrats of industry, while so many potential aspirants remain unsung. There is, perhaps, no single answer. But if we examine the history of the men behind some of these concerns, we may isolate a few guiding principles.

Take, for instance the Chances of Birmingham. An old family, with records dating back to the 14th century, its industrial history dates from 1790, when William Chance, a Birmingham hardware dealer, and his partner joined John Robert Lucas, a Bristol glass manufacturer.

William's second son, Robert Lucas, bought a glassworks at Birmingham, and founded the firm of Chance Bros. & Co., a firm that still flourishes to-day under the chairmanship of Sir Hugh Chance, with three other Chances on the board.

To make their glass, the Chances needed chemicals, and in 1835 a small chemical works was started, at a cost of £490, adjacent to the Smethwick works. It ran into difficulties, due to the noxious fumes discharged in its processes, and in 1868 was faced with a lawsuit that would have meant closing down the works. At this juncture, Alexander Macomb Chance, a nephew of Robert Lucas, took over as managing director at the age of 24. The lawsuit was rapidly settled and the nuisance dissipated: the noxious fumes were controlled and converted into by-products whose sale became an additional source of profit to the company.

Alexander turned his attention to the utilization of less noxious waste products, and in 1886 succeeded in recovering sulphur from the waste products of the manufacture of soda by the process then in vogue. In 1890 the business was converted into a private limited company entitled the Oldbury Alkali Co., Ltd., with Alexander as deputy chairman, managing director and secretary; this was amalgamated with the old-established firm of Hunt and Sons, of Wednesbury, to form Chance and Hunt, Ltd., of which Alexander was chairman from 1901 to 1912. The firm was finally acquired by Brunner, Mond & Co. in 1917 and now forms part of Imperial Chemical Industries, Ltd.

This did not, however, extinguish the Chance interest in chemicals. In 1894, Chance &

Hunt, Ltd., formed a subsidiary, in conjunction with Albright and Wilson, Ltd., to manufacture the cyanide newly in demand from the gold mining industry for the recovery of gold from crashed quartz. Alexander became chairman. In 1901, his son Kenneth Macomb, became a director and in 1906 managing director. Under his leadership, the company originally British Cyanides Co., Ltd., developed, after many vicissitudes, into British Industrial Plastics, Ltd., now the largest manufacturers of amino plastics in the world, a group producing moulding powders, moulded products, moulds and presses, with an export business alone amounting to £1,000,000 a year.

The most obvious factor in this story is the tenacity of purpose that was common to both father and son—a tenacity so strong as to be characterized as obstinacy. Alexander took over a business threatened with collapse, and worked for 15 years before the discovery that finally brought him outstanding success. Kenneth took over a moribund subsidiary and nursed it for 20 years before he found the answer to his problems. They were 20 years of vicissitude.

British Cyanides was formed to manufacture cyanide for the South African gold industry. No sooner had it got into production than the Boer War robbed it of its market. When Kenneth Chance took over in 1901, he found that the company possessed a board of directors, a staff of one chemist, a factory in good order but idle and liquid assets consisting of an overdraft at the bank and 200 tons of prussiate of soda. The stock was realised, the overdraft redeemed, and the company reorganized as a public company to manufacture cyanide from coal gas. It was modestly successful until 1914, when a new furnace, the result of two years' development work, became overheated and cracked on the first night of its operation.

The first world war brought new problems. Output of cyanide had to be expanded in conditions of appalling difficulty. Production of sodium manganate for gas masks and permanganate of potash for saccharin was started. A new plant for the production of sodium manganate was laid down. It went into production at the beginning of November, 1918; on November 11, it closed down. The government refused to pay for the installation, and Kenneth was forced to sue the Crown by Petition of Right to secure damages.

Nor was another war-time project any more successful. In 1917, the British Cyanides company, in conjunction with the Ministry of Munitions, set up a subsidiary, the British Potash Co., Ltd., to recover potash from blast furnace

B·I·P GROUP

Four lessons in healthy growth

HOLD ON

There is always a solution to a problem—though it may not be easy to find. Kenneth Chance had to struggle for years and more than once faced bankruptcy before he reached success.

KEEP AN OPEN MIND

From glass to alkalis, from alkalis to cyanides, from cyanides to moulding powders, from moulding powders to the manufacture of moulded products, moulds and finally the presses themselves, the history of the Chances is a story of continual development.

DELEGATE RESPONSIBILITY

As the Chance empire has grown, its organization has developed into a federation, with the single units in charge of executives with almost complete responsibility for management decisions within their own sphere.

RESPECT YOUR WORKERS

A tradition of paternal benevolence has ripened over the years into a mutual respect between management and workers, based (on the management side) on the belief that the workers are individuals with a rational point of view that is not limited by the size of the pay packet.

A battery of stills at Oldbury producing resins from which moulding powders are made.

To develop his new moulding powder, Kenneth Chance went into the moulding business himself: today, B.I.P. are one of the largest concerns in the country. They also produce moulds and presses.

gases. A factory was set up and turned out considerable quantities of much needed potash. But this remained unsold because the Ministry would not grant consumers licences to purchase it. Ultimately, the company went into liquidation: the plant was destroyed and sold for scrap.

The early days of peace brought a temporary recovery, but a growing export trade to America in prussiate of soda was completely eliminated by a new tariff. Production had to be curtailed and new products sought. One was thiourea, used for weighting taffeta; production was started and some sales made—when taffeta went out of fashion.

By this time, the company was in sore financial straits. At a crisis board meeting in July, 1924, a minute was passed authorizing the issue of debentures at 20 per cent. discount, if and when possible. Kenneth Chance went to Oldbury, put the case squarely to the staff and workpeople and asked them to accept drastic salary and wage cuts. These were accepted without demur; £6,000 a year was saved—enough to turn the corner.

Then came the bombshell. On the Saturday before August Bank Holiday, the bank threatened foreclosure unless a £35,000 loan was paid before the following Wednesday. Kenneth had reached the point of no return. He told the bankers exactly what he thought of them and refused to repay a farthing. The effect was salutary. He was given until Christmas, by which time he had found a more accommodating banker.

Meanwhile, fortune had turned. Rossiter, the chemist, desperately trying to turn the unwanted thiourea into a saleable product, condensed it with formaldehyde to give a colourless synthetic resin. This was shown at the Wembley Exhibition in the following year, but met with only a lukewarm response. Kenneth, with two friends, immediately set up a new subsidiary, the Beetle Products Co., Ltd., to manufacture a moulding powder from the new resin. At Christmas, 1926, tableware moulded from the new powder was shown for the first time at Harrods, and immediate orders were obtained for £15,000 worth of goods.

The next two years were difficult, but by 1928 Kenneth was able to buy out his two friends, and the Beetle company became a wholly owned subsidiary of British Cyanides. Expansion followed rapidly. In 1929 The Streetly Manufacturing Co., Ltd., was purchased to undertake the moulding side. In 1936, British Cyanides became British Industrial Plastics Ltd., and further subsidiaries followed in the next few years. To-day the group is a highly integrated nexus, producing moulding powders, converting them into moulded products, producing the moulds and the presses for moulding, producing synthetic adhesives, and selling all these products so successfully that export business alone runs at the rate of £1,000,000 a year.

No man could have faced hope so long deferred and finally triumphed without courage, tenacity and exceptional force of character. Those at Oldbury who remember Alexander—and there are many—speak of him with awe as an autocrat of the true Victorian school.

Kenneth comes from the same mould. A lifelong colleague, proposing his toast at the jubilee dinner of the company, said: "I am not going to pretend that I have always thought so well of him or held him in such high regard as I do to-day, but whatever my feelings were towards him in those early days, I am quite sure that they were reciprocal as I spent more time on the carpet than in the lab! Often after a dressing down—one of K.M.C.'s broadsides, and many of you know what they are—or what one would to-day refer to as a unilateral argument—after one of these unilateral arguments my thoughts of him

could be those of the boy who said of the Headmaster of Rugby, 'He was a beast, but a just beast.' Sometime I even omitted the word 'just'! But invariably—and I say this in all sincerity—on the next occasion on which I encountered him his manner would be so different and so charming that I felt that I had been the beast—the unjust beast—to harbour so much as an unkind thought about him.

"Time passed on, and one could not help developing a feeling of admiration for his personality—his forceful personality, his drive, his leadership, his singleness of purpose in his determination to make the firm a success. He went through hard and difficult times—but when things looked blackest Kenneth Chance was at his best. In fact, I have often heard the remark made in the works, 'The guv'nor's in good form today; things must be going badly'."

This is a remarkable tribute. The most remarkable thing about it is that, on an occasion when sentimental reminiscence and pious hope are almost inevitable, the proposer of a toast can, without offence meant or taken, speak sincerely as he finds.

But if the Chances have demanded much from their workpeople in the way of labour and loyalty, they have returned much. Alexander was a successful man, but never a rich man. He gave away at one time a third of his income. He took a great interest in his workpeople and cured the drunkenness rampant among them by founding a workmen's temperance club and himself taking the pledge. He sponsored the opening of a convalescent home at Quinton in 1874—the first of its type to be supported by, and open only to, workpeople of a single firm and their families. He established a provident accident fund to which every man subscribed a penny a week, which was doubled by the firm. He built a number of houses for his workers, and enabled them to buy them on easy terms.

Responsibility rests with men—not jobs

Pioneer work in the field of personnel welfare becomes progressively more difficult, but Kenneth has sincerely followed the same principles. The welfare arrangements at the various B.I.P. plants compare favourably to-day with the best that can be seen elsewhere. Inevitably, with the growth of the concern, the detail of personnel management has had to be left to subordinates, but the dominant interest remains. It remains a cardinal principle of Kenneth's management that every worker, no matter how humble, has the right of access to the managing director. Grievances, he says, must always be ventilated, no matter how simple or silly. And no grievance can be fully ventilated if access to the final arbiter is denied.

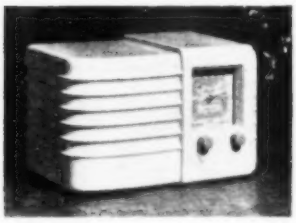
Such a policy naturally makes nonsense of the pretty organization charts beloved by the student of management problems, and of the concept of works discipline as held by many a lesser man. Kenneth Chance is content that it should be so. He quotes with relish the remark of another journalist who visited his works, and on leaving said, "Thank God you are not organized."

For Kenneth Chance, authority rests in the man, not the position. His doctrine for appointing his executives is simple. "Promote from within if you can. But primarily, grab any good man you can find, and then give him his head."

His practice exemplifies his principles. The B.I.P. group is a carefully integrated structure, covering the plastics industry from the manufacture of moulding powder to the construction of the presses that use it. But each company within the group is completely free to make its purchases wherever it likes.

The moulding shops may buy their moulds from B.I.P. Tools, Ltd. On the other hand, if the executive in charge thinks that he can do better by going elsewhere he can do so—and does. The hand of head office lies very lightly on control of expenditure. The managing director of the Streetly Manufacturing Co., Ltd., for instance in the fuel crisis in 1947 on his own initiative spent a large sum on auxiliary generating equipment. Some time later, after a succession of power cuts had paralysed activities in other factories in the district, the Board wrote to him thanking him for his initiative.

This recognition of the authority and integrity of the individual goes right down the line. Kenneth Chance is a man of strong opinions



Pioneers in good design of mass-produced goods themselves, as these specimens show, B.I.P. have, through an active design service, placed their experience at the service of other moulding concerns.

and he is extremely caustic with those who would denigrate the British worker to-day. "The British worker," he says, "is the best in the world and that is as true today as it ever has been. Given good leadership and good production facilities he can compete with anyone in the world."

The effects of this attitude may be seen from two illustrations. Both are drawn from the first world war, but might with equal cogency be taken today as a case history in the way to handle unofficial strikes In February, 1915, a telephone call came to the London office from Oldbury to say that men at work in the potshed had threatened to go on strike. Cyanide was urgently needed just then to keep the mines going in South Africa.

Kenneth Chance took the next train down, met the men and found that they were worried because he was urging every man who could be spared to enlist and at the same time was employing three men to work the hand crane. The installation of an electric crane, operated by a single worker, would release two men to join the army. Kenneth thanked them for having drawn his attention to what should have been obvious to him and promised them an electric crane as soon as one could be obtained. The men went back to work.

In November they were happily working the hand crane for 12 hours a day voluntarily and unasked, knowing that the work was urgent. The electric crane had not yet matured, but they knew that they would get it.

The second case was towards the end of the war when the engineering trade unions called the national strike. The engineers at Oldbury came out under instructions. The factory was engaged on work of the utmost importance and a very considerable amount of feeling occurred among the other workers against the engineers. When they returned three days later the problem of payment arose. There was at that time a profit sharing scheme in force and the proportion of profits available that went to each man was determined by the works committee. The problem now was: should the engineers receive any distribution from profits and, if so, how much? The committee immediately proposed that the engineers shou'd be debarred from sharing profits from that time forward.

This well-designed condiment set has sold in millions.

Internal flutes in this mixing jar are functional —not merely aesthetic.

With Kenneth Chance in the chair, however, milder counsels prevailed and it was ultimately decided that three days profits should be deducted from the share payable to the engineers. Kenneth Chance felt that this decision was important enough to merit consideration by all the workers and called a works meeting, which promptly ratified it.

The engineers promptly walked out again and a trade union official called on Kenneth Chance and complained that there had been victimization. Chance pointed out that the decision was not his but that of the works committee. The trade union official investigated the matter, went away and came back again to ask for mercy.

Chance then pointed out that, in that case, a decision must rest with the workpeople as a whole, since the original decision had been endorsed by a works meeting. He promptly called a further works meeting which was addressed by the trade union official and then thrown open to discussion. A firebrand from the shop floor immediately got up to denounce the engineers in no uncertain terms. This enabled Kenneth Chance to point out that both sides had now had their say and suggest that the matter be forgotten. His counsel prevailed and work restarted.

What, then, can be learnt from the case of Chance of the factors that can bring a small family concern to national (and even international) significance?

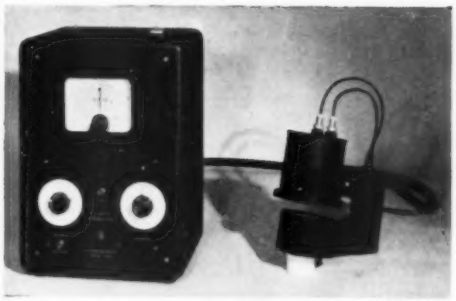
First and foremost, there is tenacity of purpose, the determination that refuses to be put down by hard times.

Secondly, there is the open mind, the refusal to be trammelled by copy-book dogmas. In the field of human relations, it may be seen in his attitude to rewards. For many years, Kenneth Chance has believed in, and practised, payment by results. But the methods by which the rewards have been distributed to workers have varied over the years

An even more striking example of the open mind lies in the field of sales. B.I.P. sell moulding powders; they also sell products moulded from these powders in competition with their own customers. But B.I.P. maintain a strong design service and will even supply completed designs.

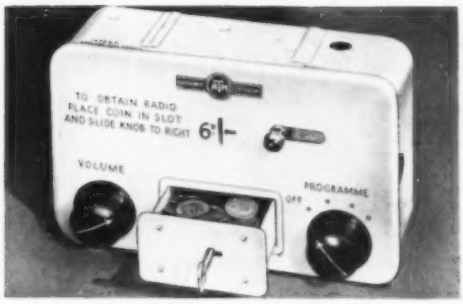
Finally, there is the human touch, the will and ability to delegate. Based fundamentally on the recognition that the subordinate executive and even the worker on the shop floor is an individual capable of responsibility, Kenneth Chance has learnt the hard lesson that authority must be delegated, but that a man must be allowed to make an occasional honest mistake.

Look Out for WHAT'S NEW



RADIOACTIVE GAUGE

ONE example of development work being done in the radioactive field for application to industry is the *Betaray* thickness gauge. Able to measure thickness and weight of many metallic and non-metallic materials without any direct physical contact with the sample, it has obvious advantages. There are two instruments—a detector head and a simply operated measuring unit.



SING A SONG OF SIXPENCE

"TO obtain radio place coin in slot and slide knob to right," are not only the instructions printed on the unit illustrated above, but the words which introduce a new gadget to the British hotel guest. By inserting 6d., the user has a selection of radio programmes with a degree of volume control. The 6d. "outlets" are supplied from centralized radios controlled by the hotel management.

GROUND LEVEL LOADER

AFTER loading at ground level, the *Ryte-Hyte Eezion* trailer is simply pumped up like a dentist's chair and then towed away under load like the conventional transporter. Unloading is as easy as turning a small tap, which lets the trailer body sink slowly and evenly to the ground—a stout, hinged tailboard becoming the "ramp" and spanning the negligible 3¾in. drop.

THREE WHEEL TRACTOR

FROM the side-view, like a highly unconventional motorcycle; from the back, like a small tractor, this three-wheeled, 3½ h.p. unit will cart, carry, pull, mow and roll. The removable tipping bucket holds about 3 cwt and additional ones can be hauled on two wheel trailers. Highly manoeuvrable, the versatile little *Roller-Tractor* has a top speed of 18 m.p.h. In less than a minute it can be transformed into a roller.

Three forms solved this logistics problem

How 10,000 Festival exhibits were moved by remote control

By A. K. ASTBURY

For top executives interested in the problem of the movement of goods, here is the story of a complicated task simply and economically tackled—with three carefully prepared forms and using part-time women clerical labour provided with the latest office equipment and stationery devices.

THE task of collecting from more than 3,500 manufacturers the 10,000 industrial exhibits being shown at the Festival of Britain exhibitions provided the promoters with an interesting problem in organization. Never before in peacetime, they claim, has one central body, its organization set up entirely from scratch, attempted the movement to certain places at certain times of objects so diverse and from places so scattered.

Responsibility for providing the Festival's industrial exhibits, which range from needles to locomotives, was taken by the Council of Industrial Design, a government sponsored department. To ensure that each exhibit chosen arrived at the right place at the right time the Council set up a servicing organization which enjoyed considerably more independence of action than is usual in a section of a government department. Its executives could and did, show initiative, and all staff, sensible that their labours were being directed with ability and imagination, worked with enthusiasm and efficiency.

Plans had to be made for exhibits to reach six main places—the South Bank exhibition, the architecture exhibition in the East End, the "Land Traveller" and the ship *Campania* bases, the exhibition of science in London and the exhibition of industrial power in Kelvin Hall, Glasgow.

In essence the problem was what came to be called in the war a "logistical" operation and indeed, much wartime experience was used in its solution, for the unit's three administrative officers are all professional soldiers who during their army careers (apart from seeing active service on many fronts) were concerned specifically with organization and management in the fields of supplies, transport and records.

Head of the unit is Mr. J. M. Benoy, a former Military Governor of Eritrea. As chief administrative officer of the Expeditionary Force (afterwards the First Army) from 1942 until the end of the North African campaign, he was responsible for the preparation of the landings in North Africa. He was brought in in November 1949 to prepare a plan for the whole operation of moving the Festival industrial exhibits.

Responsible under him for dealing with suppliers, Festival of Britain designers, and industrial officers on the Council of Industrial Design's staff is Col. K. L. Beddington, O.B.E. Formerly officer-in-charge of combined records in the army, he was, while an assistant adjutant general at the War Office, responsible for all personnel documentation and army record offices. He was also secretary of a committee which considered and rectified wartime documentation mistakes He is in charge of the progress section of the unit.

In its day-to-day working the aim of the unit was: Efficiency with Economy. Where necessary,

the unit made full use of the best the office equipment industry has to offer in forms, card indexes and so on. But where no useful purpose was to be served by having more ambitious equipment, the open files used for bringing forward certain forms looked suspiciously like food containers!

Economy in the use of labour was equally important. Typists' time is precious. Most of the unit's staff were housewives, working mornings or afternoons only; letter writing had to be kept to a minimum. For this, and other reasons, the bulk of the work was done by forms alone.

To the unit the form was not just a record which could be filed away, or a quick means of obtaining information, but an instrument through which positive and effective action might be taken, and as such had to a considerable extent done away with the need for extensive correspondence.

Forms are not generally popular in this age of controls. But it was on their imaginative and controlled use that much of the operation's success depended, and Col. Beddington speaks with almost infectious enthusiasm about them. "It was one of our first tasks to design these forms," he told me, "and I know that I used to lie in bed thinking about them and wondering how few, and of what kind, we could use to get the greatest efficiency. Much of our procedure, indeed, I sketched out in my mind while I was lying in bed before six o'clock in the morning."

It was the responsibility of the supplier to deliver his exhibit—if a heavy or unwieldly one, direct to the exhibition site; in the case of ordinary exhibits, to warehouses in or near London. The dispatch of one form covered the whole of this operation. It was then a simple matter for the Festival authorities to move the exhibits under their control, at such times as they were needed, to exhibition sites in London and Glasgow or to the bases for the two travelling exhibitions. The whole moving operation was carried out smoothly by remote control simply because it was planned in detail before it began

Here, in detail, is the procedure that was followed—and it will be seen that three main forms were used.

When an exhibit was chosen, the first step was to give it a number. The number SB/4/W910, for instance, refers to South Bank, Power and Production Section (4), Papermaking sub-section (W), article 910—which happens to be a perfume pack. The initials were varied according to the exhibitions, LT for Land Traveller, P for the architecture exhibition at Poplar, ES for the exhibition of science in London, and (no one knows why!) MX for the ship *Campania*.

Once numbered the exhibit was put in the catalogue list and the first form—the Exhibit History Sheet—came into use. This gives all the details of a given exhibit. Unlike many forms it was filled in simply by ringing a number of alternatives in each section, so that an untrained typist could type in the appropriate words on to prepared stationery.

First, part "A" of the manuscript history sheet was completed by the progress section of the unit. Part "B" was completed by the industrial officer of the Council who was concerned in choosing the exhibit in the first place; he returned the sheet to the progress section, where part "C" was completed.

The information contained on this sheet was then typed on to a *Speediset* form; each firm was given a loan agreement or contract number, which in effect became the firm's file number, and

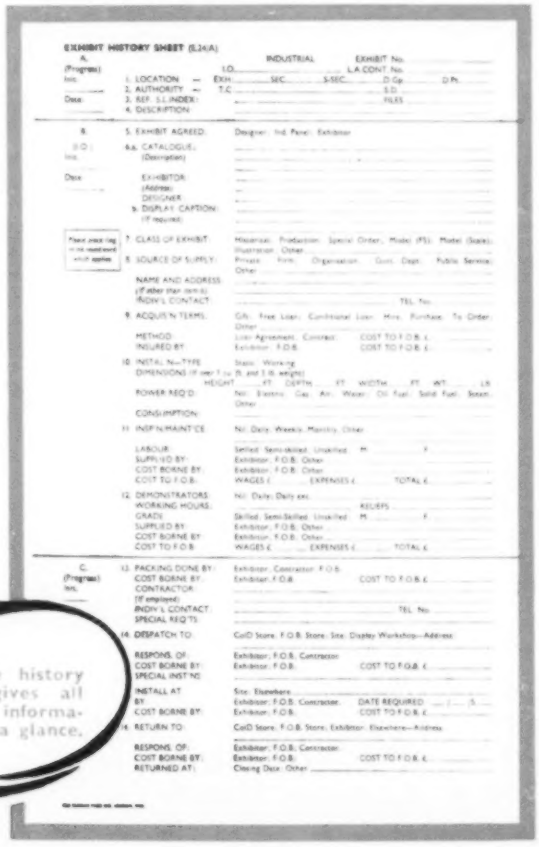


EXHIBIT HISTORY SHEET (L24A)

A. (Progress) Inits. ____ Date ____

INDUSTRIAL — EXHIBIT No. ____ I.O. ____ L.A. CONT. No. ____

1. LOCATION — EXH. ____ SEC. ____ S-SEC. ____ D.Gp. ____ D.Pt. ____
2. AUTHORITY — T.C. ____ S.D. ____
3. REF. S.L.INDEX: — FILES ____
4. DESCRIPTION

B. (I.O.) Inits. ____ Date ____

5. EXHIBIT AGREED: Designer: Ind. Panel: Exhibitor
6a. CATALOGUE: (Description)
EXHIBITOR: (Address:
DESIGNER
b. DISPLAY CAPTION: (If required)

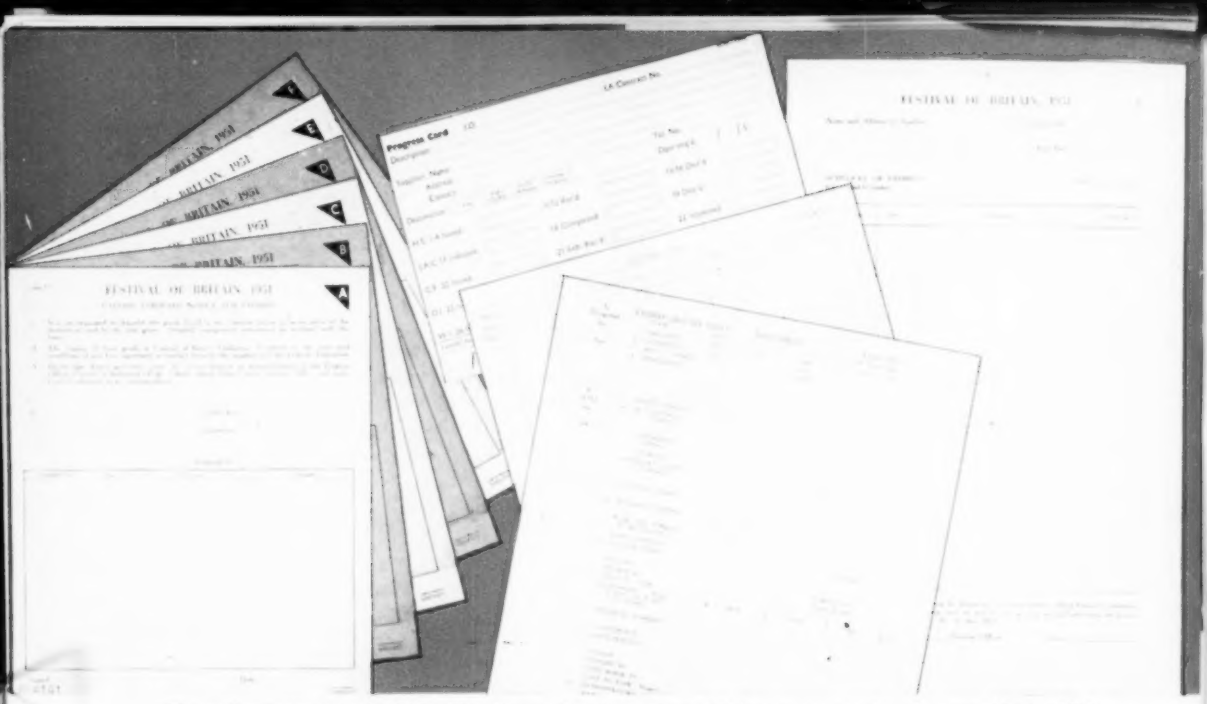
Please place ring in the appropriate which applies

7. CLASS OF EXHIBIT: Historical: Production: Special Order: Model (FS): Model (Scale): Illustration: Other:
8. SOURCE OF SUPPLY: Private: Firm: Organisation: Govt. Dept.: Public Service: Other:
NAME AND ADDRESS: (If other than items)
INDIV'L CONTACT: TEL. No.
9. ACQUIS'N TERMS: Gift: Free Loan: Conditional Loan: Hire: Purchase: To Order: Other:
METHOD: Loan Agreement: Contract: COST TO F.O.B. £
INSURED BY: Exhibitor: F.O.B. COST TO F.O.B. £
10. INSTAL'N—TYPE: Static: Working
DIMENSIONS (If over 1 cu. ft. and 1 lb. weight) HEIGHT ___ FT. DEPTH ___ FT. WIDTH ___ FT. WT. ___ LB.
POWER REQ'D: No: Electric: Gas: Air: Water: Oil Fuel: Solid Fuel: Steam: Other:
CONSUMPTION:
11. INSP'N/MAINT'CE: No: Daily: Weekly: Monthly: Other:
LABOUR: Skilled: Semi-skilled: Unskilled: M. ___ F. ___
SUPPLIED BY: Exhibitor: F.O.B.: Other:
COST BORNE BY: Exhibitor: F.O.B.: Other:
COST TO F.O.B.: WAGES £ ___ EXPENSES £ ___ TOTAL £ ___
12. DEMONSTRATORS: No: Daily: Daily exc.
WORKING HOURS: KEUPS:
GRADE: Skilled: Semi-Skilled: Unskilled: M. ___ F. ___
SUPPLIED BY: Exhibitor: F.O.B.: Other:
COST BORNE BY: Exhibitor: F.O.B.: Other:
COST TO F.O.B.: WAGES £ ___ EXPENSES £ ___ TOTAL £ ___

C. (Progress) Inits. ____

13. PACKING DONE BY: Exhibitor: Contractor: F.O.B.
COST BORNE BY: Exhibitor: F.O.B. COST TO F.O.B. £
CONTRACTOR: (If employed)
INDIV'L CONTACT: TEL. No.
SPECIAL REQ'TS:
14. DESPATCH TO: CoID Store: F.O.B. Store: Site: Display Workshop—Address:
RESPONS. OF: Exhibitor: F.O.B.: Contractor:
COST BORNE BY: Exhibitor: F.O.B. COST TO F.O.B. £
SPECIAL INST'NS:
INSTALL AT: Site: Elsewhere:
BY: Exhibitor: F.O.B.: Contractor: DATE REQUIRED: ___ / ___ / ___
COST BORNE BY: Exhibitor: F.O.B. COST TO F.O.B. £
14. RETURN TO: CoID Store: F.O.B. Store: Exhibitor: Elsewhere—Address:
RESPONS. OF: Exhibitor: F.O.B.: Contractor:
COST BORNE BY: Exhibitor: F.O.B. COST TO F.O.B. £
RETURNED AT: Closing Date: Other:

A single history sheet gives all progress information at a glance.



Three documents—a six-fold calling forward notice, a two-sided progress card, and a two-sided exhibit history sheet—all pre-printed to reduce writing-in to a minimum, were all that was needed to organize delivery of 10,000 Festival of Britain exhibits.

this number was also typed in the form. (Most exhibits are lent on conditions laid down by the Festival of Britain authorities and the Council; in cases where risk is involved a contract may be entered into.)

The separate sheets of the typed exhibit history sheet were then distributed—white to the Festival of Britain contracts department, blue to the designer of the section, buff to the management of the exhibition concerned, pink to those constructing the display, and green to the Festival's technical common services; the yellow sheet was the office copy.

At the same time a supplier's card, containing a list of all the exhibits from one supplier, was opened.

The second form to be completed was the Schedule of Exhibits, on the back of which—to save paper—the loan agreement was printed. This was typed from the history sheet and supplier's card. When sent with an explanatory letter to the manufacturer this formed the first official contract with him following the agreement on the exhibit to be supplied. Parts "A" and "B" (the two top copies) were sent to the supplier, who returned "B" signed. The latter in turn was sent to the Council's contract department. Part "C" went to technical common services and "D" was kept as the office copy and filed in loan agreement or contract number order.

The next stage involved the third form—the Calling Forward Notice for exhibits—which asked the supplier to send the goods listed to site or warehouse at a certain time. (These notices were brought forward by the same system as that used during the war to keep track of soldiers under sentence.)

One typing operation sufficed to call the exhibit forward from manufacturer to warehouse or site, and with the *Speediset* forms (which have the top sheet and some half-dozen copies attached and interleaved with carbons) not only had the typist no need to make up carbon "sets" but in the case of the calling forward notice, for instance, different instructions were printed on each copy according to the use it was being put to; and the copies, being coloured, were almost automatically delivered to the right destination by colour alone. Pigeonholes, where these were used in dispatching, were marked with appropriately coloured slips.

The calling forward notice was typed from the loan agreement or copy of the contract, with the date on which delivery was required stamped in. Copies "A" and "B" were sent to the supplier together with consignment instructions and (in the case of delivery to the South Bank) a map. The supplier returned sheet "B" and the progress section sent sheets "C" and "D" to the warehouse or, in the case of exhibits going straight to an exhibition, to the display constructors.

When the exhibit arrived in the warehouse, the warehouseman returned sheet "D"; the progress section then sent sheets "E" and "F" to the display constructors, who sent back sheet "F" with consignment instructions. Sheet "F" then went to the warehouse and was returned once more to the progress section when the exhibit had left the warehouse for the site.

Continued on page 171

MEN OF VISION

SALES PSYCHOLOGY SELLS COSMETICS

ROBERT A. Lodge, general manager of Innoxa Laboratories and Associates, has developed a sales psychology that has trebled the sales of Innoxa beauty preparations since he joined the organization in 1937. He candidly tells women that beauty is only ten per cent. cosmetics, and stresses that the other ninety per cent. of personal charm comes from within themselves.

Women seem to like hearing the obvious truth that no amount of lipstick will turn up the corners of a discontented mouth, that anger, hate or boredom will destroy the effect of make-up, however good it may be. In fact, they like it so much that Innoxa's sales are soaring.

During a business tour of Australia, representatives of rival cosmetic manufacturers who went along to hear Robert Lodge's advertised talks on beauty, said "This man is crazy. He won't get women to buy with that line."

How wrong they were is still being proved at the Innoxa Laboratories at Dalston where the staff is working overtime to catch up on orders received from Australia since Mr. Lodge's return.

During his Australian tour, Robert Lodge spoke to thousands of women in all States and broadcast over the national network. Australia, he reports, is one of the most beauty-conscious markets in the world. Women there spend more *per capita* on beauty products than in any other country. Cosmetic sales total £2 million annually—the population is 7½ millions. And on advertising and sales promotion Australia spends more per head than America.

Robert A. Lodge, General Manager, Innoxa Laboratories.

During his three months in Australia Mr. Lodge also talked on Britain's export drive and spoke to doctors and industrial representatives on elimination of dermatitis with barrier creams.

Early in the war Innoxa concentrated on finding a formula to combat dermatitis, which at that time was causing more absenteeism from munition factories than any other factor excepting the common cold. Innoxa's head chemist, A. S. Hull, evolved eleven different protective creams, which are known as "invisible gloves" since the cream disappears when rubbed into the hands.

One universal cream is not possible, as a water process requires a screen of a different type from that needed for a dry process or other types of liquids. Differently formulated creams must be employed against such varying materials as adhesives, paints, varnish, spirits, solvents, oils, acids, alkalis, petroleum, tar.

Innoxa (the name is derived from innocuous) originated 40 years ago when a French dermatologist prepared a special lotion for women suffering from skin troubles. A full range of scientific cosmetics was subsequently developed.

When Robert Lodge, a qualified accountant working in Fleet Street, was asked to join the cosmetic industry, his reaction was "what a queer sort of job for a man." But he was attracted to Innoxa when he studied its scientific background, and now talks with the zeal of a missionary about beauty. In his own words, he has a "terrific urge for this mission of beauty," and he converts his listeners—chiefly by *not* talking about cosmetics.

On his business tours he never gives the usual beauty talks or demonstrations. He talks about the value of smiling and the destructive power of bad temper, selfishness and worry.

Robert Lodge knows his subject when he talks of mind over matter. During the last war he was in hospital for three years with leg wounds, incurred in World War 1. When doctors amputated one leg and told him in 1946 he could not work again, he decided it was time he did. Since then he has travelled 60,000 miles by air on his firm's behalf, and sales have soared in every country he has visited.

In 1950, nominated by the Toilet Preparations and Perfumery Manufacturers' Federation, he was one of the team of experts from various industries who visited America to study production.

His next aim is to get beauty treatments given in hospitals to help the morale of women patients. This idea was tried with success in a Newcastle hospital last August, and is considered an essential part of most American hospital care.

Continued on next page

MEN OF VISION

Continued from previous page

THE PERFECT PARTNERSHIP

WHAT does it take to start a business and make it a success. Most people would agree that the first requirements are money and a capacity for hard work. Add to these experience of the chosen trade, plus ability to keep steady on the shifting sands of circumstance, and there is a fair chance of success.

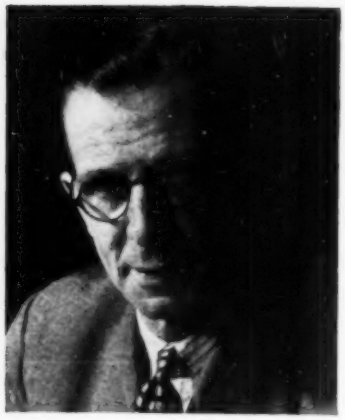
The individual who combines all these qualities is rare, but it sometimes happens that two people are perfectly complementary, the one seeing what the other misses. In all things two minds acting as with a single thought have one end in view. And, if there is a capacity for give and take in the daily stress of things, the combination cannot fail.

That is the story of Richard Fox and Reg Salmon; that is the "how" of their success. Both have a capacity for hard work (they used to put in 15 hours a day), and between them they have all the knowledge and ability needed to run a big photographic agency.

Their partnership began shortly after the first World War, when Richard Fox was a professional singer, Reg Salmon an illusionist. Salmon had a job to make ends meet, and he took part-time work as a photographic salesman. In due course he got his chance, and left the agency which employed him to join forces with another photographer named Beaver. Salmon already knew Fox, who was asked to finance a new picture agency staffed by Salmon and Beaver.

In 1926 they rented two small rooms in Crane Court and launched themselves in earnest with a staff of four. A year later they took extra premises in Red Lion Court, and two years after that they had to take 4,000 square feet of space in Tudor Street.

Despite extra staff the partners were still working 15 hours a day seven days a week, and with this kind of leadership it is perhaps not surprising that the business continued to grow. A branch was opened in Manchester, a separate studio was built for advertising work, the original 4,000 square feet was expanded to 16,000 square feet, and premises were taken in Blackfriars to handle large scale murals and giant-size reproductions.



Richard Fox and K. J. Salmon, Joint Managing Directors, Fox Photos Ltd.

All these changes called for a good many structural alterations. The way in which these were tackled is typical of the Fox and Salmon attitude to business. They built their own darkrooms, studios and offices after buying materials at auction sales. One example tells the story. When the Foundling Hospital was sold up, Richard Fox made his finest bargain: 30 doors, complete with locks and keys, for 6d. each!

Their work extends into every aspect of photography in the Press, advertising and commercial fields. Each department is run by a manager who although held responsible to the directors, acts very much on his own initiative. Good salaries are paid, and key men and star photographers earn really big money.

Fox and Salmon have always believed in advertising in the broadest sense of the word. Their announcements appear regularly in the trade Press, and more than that —their photographers have specialised in covering events which are likely to lead to more business. The Fox's head which is the trade mark of the company appears on everything — letterheads, invoices, price lists, envelopes, advertisements, folders, and so on. In this way and by recommendation the business has extended all over the country and even abroad.

The firm celebrated their 25th anniversary this year with a dinner and dance for the 107 employees and their guests totalling 250 in all.

Many of the staff look back on 15 or 20 years with the company. One of the proudest boasts of Fox Photos is that theirs is a happy ship in which anybody who is prepared to work hard can make life pleasant for himself as well as profitable.

Upstairs in Tudor Street Fox and Salmon continue to work in the offices which they have occupied for years. There has been a certain amount of redecoration but the door between them remains open and they still consult about all things. They are still as interested in getting new business and spreading their trade mark even further afield as ever.

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★

Preview for busy executives

"BUSINESS" GUIDE TO THE BUSINESS EFFICIENCY EXHIBITION

OLYMPIA JUNE 6-16th

An exclusive message to "BUSINESS"

Equipment for every need at largest-ever show

from W. B. WOODS

President, Office Appliance Trades Association

I AM privileged to have the opportunity of contributing a message to the readers of this special Exhibition number of BUSINESS.

Our Association, the Office Appliance Trades Association, represents the office and business equipment industry of Great Britain and Northern Ireland, and has organized this Exhibition at Olympia as part of the Festival of Britain activities. It is—so far as we know—the largest Exhibition of its type ever to be staged anywhere in the world, and in an area of not less than 175,000 sq. ft. under one roof will be found a comprehensive display of the most up-to-date equipment designed to provide efficiency in business.

★

NOW I would like to say a little about our industry. There has been a spectacular expansion since the war in the productive capacity of the Office Appliance Industry, and sales have multiplied at an unbelievable rate. Great new plants have been opened and many established ones expanded.

An export business of substantial dimensions has been built up, not excluding the North American market. The phrase "Coals to Newcastle" may have lost its significance in recent weeks, but nevertheless it is no mean achievement that our industry has established itself in the U.S. market with some success. Before the war a large percentage of the equipment handled by this Association was imported, and our exports were negligible. In January last, exports were well in excess of £1,000,000 while imports have been very substantially reduced.

★

REVERTING to the Exhibition, many new products of great interest will be on view. Of course, not all of the equipment to be shown is available for immediate delivery, as some of our members are still faced with a difficult delivery problem, especially so far as the home

A 100 PAGE BUSINESS GUIDE

Mr. W. B. Woods, President, Office Appliance Trades Association.

market is concerned, but I would like to take this opportunity of emphasising that all our members are anxious to render every service to visitors to the Exhibition.

Assembled in the Grand Hall will be a body of men and women who between them have a tremendous fund of experience in the promotion of business efficiency. Visitors should not hesitate to avail themselves of that service which will be given freely without obligation on their part.

★

THE Exhibition includes some interesting features apart from the actual current exhibits.

An historical section will be on view in which members are displaying many of the prototypes of their products, which will serve to emphasise the progress which has been made over the years. It is hoped that, in collaboration with the Science Museum, Kensington, a number of particularly interesting office appliances of early date will be on view.

A film theatre will be giving frequent shows of films relating to efficiency in the office. The finals of the *News Chronicle* National Typing and Office Efficiency Contests will be held at Olympia during the period of the Exhibition.

In fact, this will be an Exhibition to be remembered and one which everybody interested in business efficiency should not miss. The Exhibition will be opened by the Lord Mayor of London at 11 a.m., on Wednesday, June 6.

Speed with economy is the keynote of 1951 equipment

THE keynote to be struck by equipment at the 1951 Business Efficiency Exhibition is speed of operation with economy in performance. While makers of office equipment are producing technically efficient products, the cost of operating this equipment has not been lost sight of.

In any business context—at least in peace-time—the final arbiter of efficiency is the economic one. Unless, in any particular instance, this acid test is successfully met, the whole thing fails, no matter how impressive the technical performance.

The function of the office is to serve management, and it is in the light of the quality, quantity and timeliness of this service that its performance, and that of any means it may employ, must ultimately be judged.

This service may be summarized in the following terms: the recording, analysing, the storing and transmission of the basic data relating to the conduct of the business, as measured in quantitative, qualitative or financial terms.

Adaptable and attractive. The Remington Rand Foremost accounting machine.

What equipment is available to provide this service?

Equipment for Recording Business Data.—Within this category is a whole panorama of business aids, from those intended to facilitate the written form to the recording of sound or vision and visual impressions (i.e., those which, though primarily written, printed or physical in form, depend for their efficacy on the visual impression they make).

Efficient in appearance and operation. IBM electric typewriter.

Written record equipment, both the media on which the data is recorded and the means of housing such media, rely for their appeal almost exclusively on two features—one, the individuality of each separate record, such as a loose sheet or card; and, two, the visuality of the essential facts of the record. Hence the plethora of visible edge records in book, cabinet or wheel form, all employing the visual aid of code signals along the visible edge.

The important thing for any prospective user of this method to decide is not whether to use visible edge records as opposed to the "blind" variety, but the particular form the *housing* of these records should take. Among the varieties offered there is something to meet any combination of requirements, but, other things being equal, the book type of visible edge record scores in economy, portability and general ease of handling.

As to machinery, the typewriter has been with us so long that it is difficult to conceive of any further improvement. With its all-enclosed stream-lined appearance, electric actuation, feather-weight touch and interchangeability of working sections, the modern typewriter bears an air of efficiency and takes pride of place among the tools of management.

Copying of Recorded Data.—Modern business demands a considerable degree of copying or multiplication of basic documents. Two broad classes of copying have to be catered for: one, simultaneous reproduction of the document; and two, repetitive reproduction of the document at different times.

Thus have developed on the one hand the duplicating machine in both its generalized and specially adapted forms, and, on the other, the addressing machine, with the multifarious applications that belie the narrowness of its name. Under this head we must also recognize the value of continuous stationery in manifold form and the equipment which has been devised to house it or facilitate its use.

Duplicating machines which will be seen on show extend from the simple hand-roller device, employing the spirit duplicator principle, to the Multilith and Rotaprint colour printing machines, whose capacity is so large as to be generally beyond the requirements of all but the very large business. In between these extremes will be seen a very useful range of both stencil and hectographic duplicating equipment. The criteria of choice for the user must again be considerations of economy, quantity and quality of reproduction.

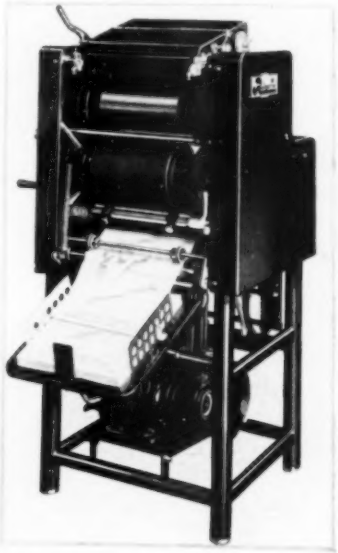
An interesting development of these machines is that of selective reproduction from an original master—a development which has been widely applied to the production of factory forms. Both the spirit duplicator and the addressing machine have been successfully adapted for this kind of task

In the field of repetitive copying at intervals of time but in small quantities, the addressing machine undoubtedly stands supreme, as shown by its conspicuous success in the preparation of the various documents connected with the operation of payrolls. A highlight of development in the addressing machine is the link-up which Adrema have effected with the punched-card machine, thus combining the versatility of the latter with the undoubted advantages of the former in addressing invoices, statements, and so forth. Another recent development is the Automatic Letter Writer, which combines the speed and economy of the circular letter with the personal touch of an indistinguishable individual address and salutation.

The Billing Board is a very useful device which has gained much impetus in recent years for P.A.Y.E. requirements, and several models marketed by different makers will be on show. As a simultaneous copying device it offers a number of advantages where the information copied is required only once and the number of documents are not numerous. When the volume of documents is large, such as in invoicing or purchase ordering, continuous stationery offers the best method of making one-time copies.

Analysis of Business Data.—It would be difficult to exaggerate the important part that equipment in this category plays in fulfilling

This Shannoleaf bureau holds 15,000 records.



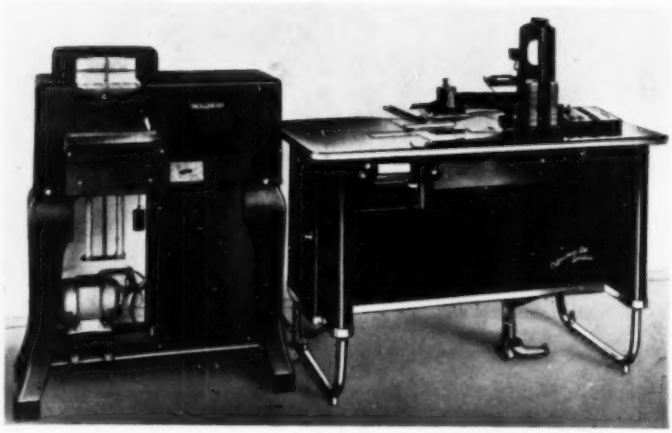
To-day's duplicating machines extend from the little Bandarette (left) to the speedy Rotaprint colour printing machine shown above.

the functions in the office as a servant of management. Development in this field is a continuous process, a constant striving to meet the needs of a wide variety of users. Increased automaticity is a leading feature of all machines in this class but the requirements of the occasional user have not been forgotten. The simpler type of manual calculating machine, to take only one example, is given its place in the sun.

Users are still awaiting, however, the calculating machine that will not only calculate the answers but print them on the work sheet. It may be some time before the office can profitably avail itself of the tremendous speed of the electronic computing machine, but is it too much to hope that one may be commercially provided in the not too distant future?

Some manufacturers of accounting machines provide a range of models to meet different circumstances, while others pin their faith to one or two standardized models, versatility being achieved by means of the ingenious form-bar feature. All-enclosed construction and non-glare finish are noticeable features of the latest machines. There has also been solid progress by way of increased register capacity and flexibility of performance.

Punched card machines are really in a category of their own, as they cover such a broad scope of office functions, but their greatest advantage over other equipment is in the field of the analysis of data. Development is continually taking place and a number of new features will be seen among the range of equipment exhibited by companies in this field.



Versatile. The Adrema addressing machine linked with Hollerith punched card equipment

Storage of Business Records.—The modern filing cabinet is by now a fairly standardized piece of equipment; it is to sturdiness of construction and finished appearance that we must look for a comparison between the many makes. The internal housing of records in cabinets for ease of reference is, however, an interesting feature. Integration of the storage unit with the working unit is perhaps the most notable development and a good example is the Shannoleaf bureau, which holds 15,000 records as well as serving as a working station.

More permanent and secure storage is available in the selection of safes. One feature is the ease with which vital records may be stowed away safely and securely in a matter of seconds by using suitably designed record units on castors.

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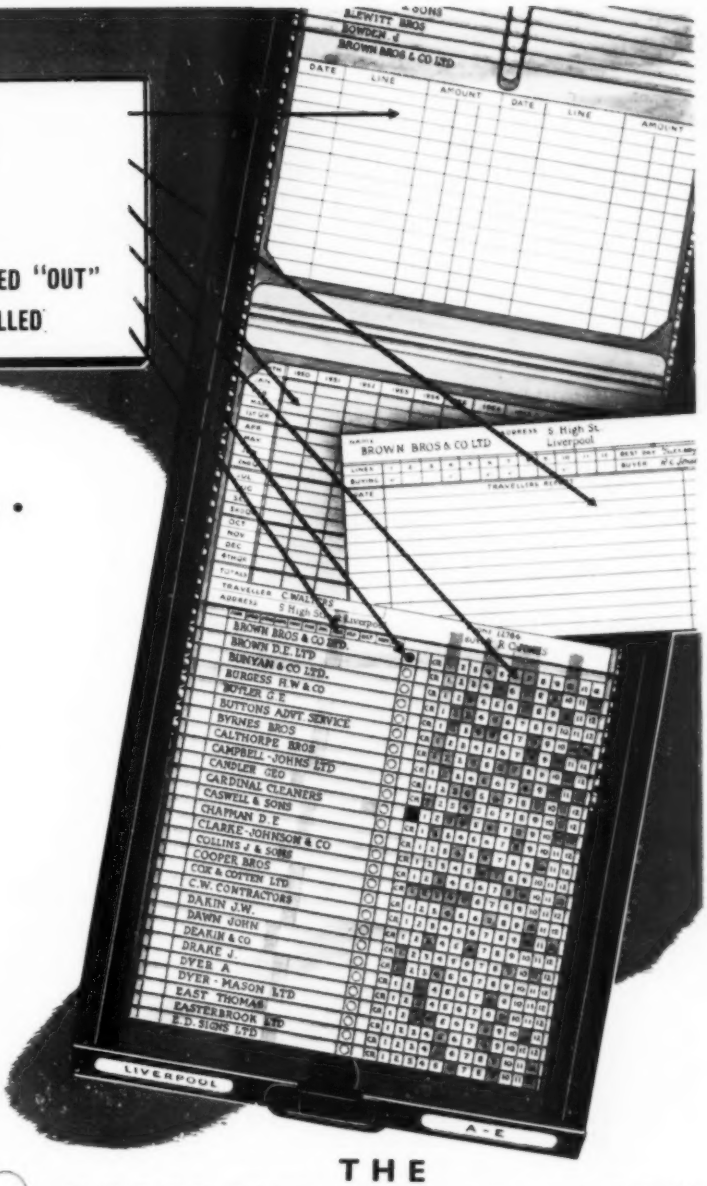

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Block & Anderson Ltd. (65 & 75)
Burroughs Adding Machine Ltd (48 & 53)
Columbia Ribbon & Carbon Mfg. Co. Ltd. (4
Ellams Duplicator Co. Ltd. (27a)
Ford, Frank R. Ltd. (15)
Imperial Typewriter Co. Ltd. (10)
Ofrex Ltd. (6)
Remington Rand Ltd. (45 & 55)
Roneo Ltd. (64 & 76)
Rose, H. M & Co. Ltd. (1)
Royal Typewriters. (82)
Standard Office Supplies Co. (84)
Underwood Elliott Fisher Ltd. (19 & 32)

SAFES

Chubb & Son's, Lock & Safe Co. Ltd. (46)
Milners Safe Co. Ltd. (86)
Moore's Modern Methods Ltd. (35)
Office Machinery Ltd. (8)
Remington Rand Ltd. (45 & 55)

SEATING

Dare-Inglis Products Ltd. (30)
Evertaut Ltd. (40)
Leabank Chairs Ltd. (87)
Milners Safe Co Ltd. (86)
Moore's Modern Methods Ltd. (35)
Office Machinery Ltd. (8)
Remington Rand Ltd. (45 & 55)
Roneo Ltd. (64 & 76)
Sankey-Sheldon Ltd. (43)
Shannon Ltd., The. (20)
Tan-Sad Chair Co. (1931) Ltd., The. (62)

STAPLING MACHINES AND ACCESSORIES

London Letter File Co. Ltd. (28)
Ofrex Ltd. (6)
Rotaprint (Kaye's) Agency Ltd. (74)
Standard Office Supplies Co. (84)

STORAGE EQUIPMENT

Art Metal Construction Co. (42)
Constructors Ltd. (11)
Evertaut Ltd. (40)
Glover, J. & Sons Ltd. (23)
Hayward Co. (Addressing Machines) Ltd., The. (17)
Howden, James & Co. Ltd. (68)
Kalamazoo Ltd. (18)
London Letter File Co. Ltd. (28)
Milners Safe Co. Ltd. (86)
Moore's Modern Methods Ltd. (35)
Owen & Randall (Stor Cabinets) Ltd. (26)
Remington Rand Ltd. (45 & 55)
Roneo Ltd. (64 & 76)
Rubery, Owen & Co. Ltd. (33)
Sankey-Sheldon Ltd. (43)
Shannon Ltd., The. (20)

TICKET PRINTING MACHINES

Addressograph-Multigraph Ltd. (79 & 100)
Adrema Ltd. (56)
Dapag (1943) Ltd. (80)
International Time Recording Co. Ltd. (41)
Roneo Ltd. (64 & 76)
Underwood Elliott Fisher Ltd. (19 & 32)

TIME RECORDERS

Blick Time Recorders Ltd. (25)
Gledhill-Brook Time Recorders Ltd (72)
International Time Recording Co. Ltd. (41)
T.R. Service (Telephone Rentals Ltd.). (57)

TYPEWRITERS & ACCESSORIES

Bar-Lock Typewriter Co. (2)
British Olivetti Ltd. (47)
British Typewriters Ltd. (52)
B.T.L. Office Equipment Distributors Ltd. (52)
Burroughs Adding Machine Ltd. (48 & 53)
Hayward Co. (Addressing Machines) Ltd., The. (17)
Imperial Typewriter Co. Ltd. (10)
International Time Recording Co. Ltd. (41)
Office Machinery Ltd. (8)
Ofrex Ltd. (6)
Oliver Typewriter Manufacturing Co. Ltd. (49)
Petty & Sons Ltd. (89)
Remington Rand Ltd. (45 & 55)
Royal Typewriters. (82)
Smith, W. H. & Son Ltd. (66)
T.S. (Office Equipment) Ltd. (21)
Underwood Elliott Fisher Ltd. (19 & 32)

VISIBLE RECORDS AND SYSTEMS

Art Metal Construction Co. (42)
Block & Anderson Ltd. (65 & 75)
Bulmer's (Calculators) Ltd. (44)
Carter-Parratt Ltd. (99)
Cave, C. W. & Co. Ltd. (51)
International Time Recording Co Ltd. (41)
Kalamazoo Ltd. (18)
Manifoldia Ltd. (34)
Moore's Modern Methods Ltd. (35)
National Loose Leaf Co. Ltd. (3)
Remington Rand Ltd. (45 & 55)
Roneo Ltd. (64 & 76)
Sankey-Sheldon Ltd. (43)
Seldex Constructors Ltd. (2a)
Shannon Ltd., The. (20)
Trade Loose Leaf Co. Ltd., The. (94)

WAGES PAYING

Adrema Ltd. (56)
Hayward Co (Addressing Machines) Ltd., The. (17)
National Cash Register Co. Ltd., The. (61 & 78)

WATCHMEN'S SUPERVISORY SYSTEMS

Blick Time Recorders Ltd. (25)
T.R. Service (Telephone Rentals Ltd.) (57)

INDEX

TRADE NAMES

Trade Names of Products Manufactured or Distributed by Exhibitors

(Stand Nos. in parenthesis)

A

ACCOUNTANTS—manilla pockets. The Stolzenberg Patent File Co. Ltd. **(88)**
ACE BLUE BOX—staples. The Standard Office Supplies Co. **(84)**
ACE—stapling machines. The Standard Office Supplies Co. **(84)**
ADD-MASTER—adding machine. The Muldivo Calculating Machine Co. Ltd. **(96)**
ADDO—adding listing machines. Bulmer's (Calculators) Ltd. **(44)**
ADDRESSALL—addressing and listing machines. Addressall Machine Co. **(38)**
ADDRESSOGRAPH—addressing machines. Addressograph-Multigraph Ltd. **(79 & 100)**
ADMINDEX—visible index card systems. Carter-Parratt Ltd. **(99)**
A. K.—thong ledgers and binders. National Loose Leaf Co. Ltd. **(3)**
ALACRA—continuous business forms, registrators, form feeding devices for typewriters, accounting machines, addressing machines and teleprinters. W. H. Smith & Son Ltd. **(66)**
ALLIANCE—manilla desk wallet. The Stolzenberg Patent File Co. Ltd. **(88)**
ANSON—P.A.Y.E. machines. George Anson & Co. Ltd. (Office Machines). **(59)**
ART METAL—steel office furniture. Art Metal Construction Co. **(42)**
AUTO-GUIDE—edge binder. Ofrex Ltd. **(6)**

B

BANDA LINE-POSTER—ledger posting machine. Block & Anderson Ltd. **(65 & 75)**
BANDAMAIL—letter openers and sealers. Block & Anderson Ltd. **(65 & 75)**
BANDARETTE—addressing duplicator. Block & Anderson Ltd. **(65 & 75)**
BANDA—spirit duplicators, typewriter attachment, teleprinter attachment. Block & Anderson Ltd. **(65 & 75)**
BANDA PLANFLEX—visual control board. Block & Anderson Ltd. **(65 & 75)**
BANKDEX—visible index equipment. Bulmer's (Calculators) Ltd. **(44)**
BAR-LOCK—model 22 standard typewriter. Bar-Lock Typewriter Co. **(2)**
BIZADA—visible card index systems. Carter-Parratt Ltd. **(99)**
BLICK—electric impulse driven and mains driven wall clocks. Blick Time Recorders Ltd. **(25)**
BLICK STAFSIGN—signature time recorder. Blick Time Recorders Ltd. **(25)**
BLICK STANDARD—factory card system time recorder. Blick Time Recorders Ltd. **(25)**
BLICK—telegraphic electric time and date stamp. Blick Time Recorders Ltd. **(25)**
BLICK UNIVERSAL—multi-purpose time and date stamp. Blick Time Recorders Ltd. **(25)**
BLOCK & ANDERSON SIMPLEX—production control machine. Block & Anderson Ltd. **(65 & 75)**
BLUE DIAMOND—binders. National Loose Leaf Co. Ltd. **(3)**
BLUE STANDARD—binders. National Loose Leaf Co. Ltd. **(3)**
BRADMA—addressing machines and business systems. Adrema Ltd. **(56)**
BRITANNIC—hand operated calculating machines. The Muldivo Calculating Machine Co. Ltd. **(96)**
BRUNSVIGA—calculating machine. Block & Anderson Ltd. **(65 & 75)**
B SERIES SAFES—fire, fall and thief resisting safes. Milners Safe Co. Ltd. **(86)**
BULMER ROTARY 50—hand-operated duplicator. Bulmer's (Calculators) Ltd. **(44)**
BURROUGHS—adding, calculating, bookkeeping and statistical machines. Burroughs Adding Machine Ltd. **(48 & 53)**

C

CARBON SNAP-OUT—unit sets interleaved with one-time carbon. Fanfold Ltd. **(63)**
CARD-FAST—machine accounting equipment. Kalamazoo Ltd. **(18)**
CARDWHEEL—rotary card index. C. W. Cave & Co. Ltd. **(51)**
CAVEDEX—visible index systems. C. W. Cave & Co. Ltd. **(51)**
CAVE—range of office furniture. C. W. Cave & Co. Ltd. **(51)**
CHRONOGRAM—automatic time signal control unit. T. R. Service, Telephone Rentals Ltd. **(57)**
CHUBB—burglar and fire resisting safes and office equipment. Chubb & Son's, Lock & Safe Co. Ltd. **(46)**
CLAMPO—non-perforate file. The Stolzenberg Patent File Co. Ltd. **(88)**
CLIPPER—time recorders. Gledhill-Brook Time Recorders Ltd. **(72)**
COLLATOR—desk sorter. The Stolzenberg Patent File Co. Ltd. **(88)**
COLUMBIA—inked carbons, carbon papers and Readymaster system. Columbia Ribbon and Carbon Mfg. Co. Ltd. **(4)**
COMMODORE—standard typewriters. T. S. (Office Equipment) Ltd. **(21)**
COMPTOMETER—adding and calculating machines. Felt & Tarrant Ltd. **(83)**
CONTEX—adding machine. Office Machinery Ltd. **(8)**
COPYCAT—reflex copying equipment. Distributed by Copycat Associated (Marketing) Ltd. **(105)**
COPYREX—spirit duplicator. Office Machinery Ltd. **(8)**
COPY-WRITER—accounting system. Kalamazoo Ltd. **(18)**
CURTA—calculator. Distributed by London Office Machines Ltd. **(102)**
C.V.S.—suspended filing equipment. Art Metal Construction Co. **(42)**
C.V.S.—visible suspended filing equipment. Bulmer's (Calculators) Ltd. **(44)**

D

DAILY BALANCE—pen accounting machine. Carter-Davis Ltd. **(71)**
DEFINAC—accounting equipment and stationery. Definac Ltd. **(22)**
DICTO-CALL—staff location system. Dictograph Telephones Ltd. **(12 & 37)**
DICTOGRAPH—intercommunication equipment. Dictograph Telephones Ltd. **(12 & 37)**
DIMAFON—dictating and reproducing machine. Royal Typewriters. **(82)**
DIRECTAPHONE—loud-to-loud telephone system. T.R. Service, Telephone Rentals Ltd. **(57)**
DIVISUMMA—automatic printing calculator. British Olivetti Ltd. **(47)**
DOUBLE-FAST—machine accounting equipment. Kalamazoo Ltd. **(18)**
DOUGLAS—loose leaf catalogue cover. The Stolzenberg Patent File Co. Ltd. **(88)**
DRILLIT—paper drill. Standard Office Supplies Co. **(84)**
DU-AL—tubular steel furniture. Dare-Inglis Products Ltd. **(30)**
DUPLIMAT—paper duplicating masters. Addressograph-Multigraph Ltd. **(79 & 100)**

E

EAGLE—visible record books. The Trade Loose Leaf Co. Ltd. **(94)**
ECONOMIC—loose leaf ledgers. Moore's Modern Methods Ltd. **(35)**
EDUCATIONAL MODEL—duplicator. Gestetner Ltd. **(85 & 95)**
ELECTROSUMMA—adding/listing machine for sterling. British Olivetti Ltd. **(47)**
ELITE TRU-PAK—autographic registers. Egry Ltd. **(9)**
ELLAMS—hand and electrically operated duplicators. Ellams Duplicator Co. Ltd. **(27a)**
ELLIOTT—addressing and listing machines. Distributed by the sole agents, The Hayward Co. (Addressing machines) Ltd. **(17)**
ELLWOOD—office supplies. Underwood Elliott Fisher Ltd. **(19 &32)**
EMGEE—duplicator. Gutteridge Sampson Ltd. **(24)**
EMGEE—large memo-stamp. Gutteridge Sampson Ltd. **(24)**
EMPIRE ARISTOCRAT—portable typewriter. British Typewriters Ltd. **(52)**
EVEREST—standard and portable typewriters and calculators. T.S. (Office Equipment) Ltd. **(21)**
EVERYMAN.—visible card book units. The Trade Loose Leaf Co. Ltd. **(94)**
EXPANDEX—filing systems and equipment. Expandex Visible Filing Co. Ltd. **(91)**

Continued on page 71

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INDEX
TRADE NAMES

F

FACIT—calculating machine. Block & Anderson Ltd. (65 & 75)
FALCON—visible record books. The Trade Loose Leaf Co. Ltd. (94)
FANFOLD—continuous stationery. Fanfold Ltd. (63)
FINDEX—punched card system. C. W. Cave & Co. Ltd. (51)
FLEET-RAIL—machine accounting equipment. Moore's Modern Methods Ltd. (35)
FLEXCORD—flat manilla files with binding apparatus. The Stolzenberg Patent File Co. Ltd. (88)
FLEXOLIFT—flat files with manilla binding apparatus. The Stolzenberg Patent File Co. Ltd. (88)
FLYWEIGHT—light weight machine posting tray. Roneo Ltd. (64 & 76)
FORDIGRAPH—spirit process duplicating machines. Frank R. Ford Ltd. (15)
FOREMOST—accounting machine. Remington Rand Ltd. (45 & 55)
FRANKOPOST—postal franking machines, counting machines and overprinting machines. Universal Postal Frankers Ltd. (29)
FRIDEN—calculators. Bulmer's (Calculators) Ltd. (44)

G

G.B.-BELL & HOWELL—microfilm equipment. Burroughs Adding Machine Ltd. (48 & 53)
G.D.—ribbons. Ofrex Ltd. (6)
GESTEPRINT—office process. Gestetner Ltd. (85 & 95)
GIANT—stapling machines. Ofrex Ltd. (6)
GLADIATOR—paper trimmers. Standard Office Supplies Co. (84)
GLEDHILL-BROOK—time recorders. Gledhill-Brook Time Recorders Ltd. (72)
GLEDHILL—cash registers and cash tills. G. H. Gledhill & Sons Ltd. (72)
GOLD SCRIPT—carbon paper and ribbons. Ofrex Ltd. (6)
GRAPHDEX—graphic wall chart. Remington Rand Ltd. (45 & 55)
GRAPHOTYPE—embossing machines. Addressograph-Multigraph Ltd. (79 & 100)
GRAY MAGIC—standard typewriter. Royal Typewriters. (82)
GUIDEX—manilla files, visible filing folders and accessories; guide cards, loose leaf books. The Trade Loose Leaf Co. Ltd. (94)

H

HAMMER TACKER—stapling machine. Ofrex Ltd. (6)
HERMES AMBASSADOR—automatic and standard office typewriters. Sole distributors B.T.L. Office Equipment Distributors Ltd. (52)
HERMES 2000—light office model typewriter. Sole distributors B.T.L. Office Equipment Distributors Ltd. (52)
HOLLERITH—electrical punched card accounting equipment. British Tabulating Machine Co. Ltd. (81 & 98)
HOTEL MODEL—duplicator. Gestetner Ltd. (85 & 95)
HOWDEN—steel office equipment and furniture. James Howden & Co. Ltd. (68)
HURRYPHONE—pageing equipment. Dictograph Telephones Ltd. (12 & 37)

I

IBM—electric accounting machines, electric typewriters and proof machine. International Time Recording Co. Ltd. (41)
ICC—mixed silver counting and sorting, and single denomination coin and token counting machines. International Coin Counting Machine Co. Ltd. (92)
ICC-RAPID—letter opening machines and envelope sealing machines. International Coin Counting Machine Co. Ltd. (92)
IMPERIAL GOOD COMPANION AND AND MODEL T—portable typewriters. Imperial Typewriter Co. Ltd. (10)
IMPERIAL PORTABLE 3—typewriter. Imperial Typewriter Co. Ltd. (10)
IMPERIAL 60—standard office typewriter. Imperial Typewriter Co. Ltd. (10)
IMPRIMA LITTLE GIANT—overprinting machine. Dapag (1943) Ltd. (80)
INSERTA—mailing machines. Unifold Mailing Machines Ltd. (90)
INTERNATIONAL—electric job timer and programme control, secondary clock chimes and personnel signalling. International Time Recording Co. Ltd. (41)
INTERNATIONAL PRINTIME—electric time stamp. International Time Recording Co. Ltd. (41)
INTERNATIONAL SUPERELECTRIC—master clock attendance time recorder. International Time Recording Co. Ltd. (41)
INTERNATIONAL TICKETOGRAPH—production, wages and progress control system International Time Recording Co. Ltd. (41)

J

JOCA—document files. C. W. Cave & Co. Ltd. (51)

K

KARBOPRINT—carbon spot stationery. Fanfold Ltd. (63)
KARDEX—visible record equipment. Remington Rand Ltd. (45 & 55)
KINGSWAY—loose leaf ledgers. Moore's Modern Methods Ltd. (35)
KODAK LIBRARY HEADER—for reading projected photographic reproductions on microfilm. Recordak Division, Kodak Ltd. (87a)
KODAK MICRO-FILE—camera for photographic recording of documents, etc. Recordak Division, Kodak Ltd. (87a)
KODAK V.P. AUTO—numberer and endorser. Recordak Division, Kodak Ltd. (87a)

L

LANGAPRES UNIVERSAL PRINTER—for overprinting labels, tickets, tags, cartons, etc. Dapag (1943) Ltd. (80)
LEABANK—workchairs. Leabank Chairs Ltd. (87)
LEXIKON 80—standard typewriter. British Olivetti Ltd. (47)
LEXIKON—electric typewriter. British Olivetti Ltd. (47)
LINEDEX—visible strip index equipment. Remington Rand Ltd. (45 & 55)

M

MACHINE-POSTINDEX—accounting system. Art Metal Construction Co. (42)
MADAS—electric tabulating machines. The Muldivo Calculating Machine Co. Ltd. (96)
MANAGER'S DESK—double pedestal office desk. Milners Safe Co. Ltd. (86)
MANIBAR—continuous stationery attachment. Manifoldia Ltd. (34)
MANICOPY—book-keeping system. Manifoldia Ltd. (34)
MANISPOT—carbon duplicating process. Manifoldia Ltd. (34)
MARCHANT—calculating machine. Block & Anderson Ltd. (65 & 75)
MASTERFORM—desks and tables. Sankey-Sheldon Ltd. (43)
MATTERS-IN-SUSPENSION—manilla desk wallets. The Stolzenberg Patent File Co. Ltd. (88)
MAXIMA—manilla pockets. The Stolzenberg Patent File Co. Ltd. (88)
MERCEDES—all-electric accounting machine and invoicing machines. Mercedes Sterling Book-keeping and Calculating Machines Ltd. (27)
MERCURY—multi-post book-keeping recorders. George Anson & Co. Ltd. (Office Machines). (39)
MERLIN—visible filing equipment. The Trade Loose Leaf Co. Ltd. (94)
METALIQUE—carbon paper. Ofrex Ltd. (6)
METCHAIR—office and industrial seating. Office Machinery Ltd. (8)
METROPOLITAN—fire resisting book safes. Milners Safe Co. Ltd. (86)
M44—standard typewriter. British Olivetti Ltd. (47)
MILJUNEX—junior executive's chair. Milners Safe Co. Ltd. (86)
MILJUSTA—typist's adjustable chair. Milners Safe Co. Ltd. (86)
MILSENEX—senior executive's chair. Milners Safe Co. Ltd. (86)
MILSPAN—suspended pocket filing system. Milners Safe Co. Ltd. (86)
MILSTACK—stacking chair. Milners Safe Co. Ltd. (86)
MILSTENOG—typist's standard chair. Milners Safe Co. Ltd. (86)
MILSWIVEL—director's swivel chair. Milners Safe Co. Ltd. (86)
MINIPAK—portable register. Egry Ltd. (9)
MINOR—counter height storage cupboard. Milners Safe Co. Ltd. (86)
M.M.M.—visible strip index. Moore's Modern Methods Ltd. (35)
MODERN—internal telephones and loud-speaker master stations. Modern Telephones (Gt. Britain) Ltd. (93)
MODERN MINOR—small intercom. systems. Modern Telephones (Gt. Britain) Ltd. (93)
MONROE—calculating machines. Monroe Calculating Machine Co. Ltd. (50)
MONRO-MATIC—adding calculator. Monroe Calculating Machine Co. Ltd. (50)
MOORESAFE—machine accounting equipment. Moore's Modern Methods Ltd. (35)
MOORE'S DUPLICATOR—invoice and order systems. Moore's Modern Methods Ltd. (35)
MOORE SLIP—binders for printed matter. Moore's Modern Methods Ltd. (35)
MOORE'S MINOR—visible records. Moore's Modern Methods Ltd. (35)
MOORESPEED—machine accounting equipment. Moore's Modern Methods Ltd. (35)
MOORE-VISIBLE—machine accounting equipment. Moore's Modern Methods Ltd. (35)
MOORE-WIRE—binders for printed matter. Moore's Modern Methods Ltd. (35)
MULTICOM—intercommunication equipment. Hadley Sound Equipments. (16)
MULTIGRAPH—letterpress duplicators. Addressograph-Multigraph Ltd. (79 & 100)
MULTILINEX—dual-purpose systems machines. Frank R. Ford Ltd. (15)
MULTILITH—offset litho duplicators. Addressograph-Multigraph Ltd. (79 & 100)
MULTO—calculators. Bulmer's (Calculators) Ltd. (44)

N

NATDEE—series of students' ring books. National Loose Leaf Co. Ltd. (3)
NATIONAL CLASS 100—cash registers. National Cash Register Co. Ltd. (61 & 78)
NATIONAL CLASS 31—accounting machine. National Cash Register Co. Ltd. (61 & 78)
NATIONAL CLASS 3000—accounting machine. National Cash Register Co. Ltd. (61 & 78)
NATIONAL CLASS 2000—accounting machines. National Cash Register Co. Ltd. (61 & 78)
NATIONAL CREDIT SANCTION SYSTEM—National Cash Register Co. Ltd. (61 & 78)
NATIONAL—memo pocket books. National Loose Leaf Co. Ltd. (3)
NATIONAL—roll-labels. National Loose Leaf Co. Ltd. (3)
NEOPOST—postal franking machines, National Insurance and cheque signing machines. Roneo-Neopost Ltd. (64 & 76)
NEW MERSEY—visible filing cabinets. Milners Safe Co. Ltd. (86)
NIMBLEX—visible records. Moore's Modern Methods Ltd. (35)
NOVO—manilla pockets. The Stolzenberg Patent File Co. Ltd. (88)
NUMBRIAN—manilla pockets. The Stolzenberg Patent File Co. Ltd. (88)
NUMERIA—calculating machines. Mercedes Book-keeping & Calculating Machines Ltd. (27)

Continued on next page

INDEX
TRADE NAMES

O

OFREX REINFORCER—punching and reinforcing machine. Ofrex Ltd. **(6)**
OLIVER—Model 21 standard, and portable typewriters. Oliver Manufacturing Co. Ltd. **(49)**
180 EXPRESS INKER—duplicator. Gestetner Ltd. **(85 & 95)**
160 EXPRESS INKER—duplicator. Gestetner Ltd. **(85 & 95)**

P

PARABAR—continuous interfold style forms for typewriters and addressing machines. Lamson Paragon Supply Co. Ltd. **(106)**
PARAGON—carbon copy books, sales check books, receipt books, loose leaf books and forms, automatic registers, fanfold continuous forms, interfold continuous forms, and sprocket-feed continuous forms. Lamson Paragon Supply Co. Ltd. **(106)**
PARLA-PIVOT—binders for printed matter. Moore's Modern Methods Ltd. **(35)**
PAXMASTER—loud-to-loud telephone system for use with private automatic exchanges. T.R. Service, Telephone Rentals Ltd. **(57)**
PAYE—wages systems. Carter-Davis Ltd. **(71)**
PEERLESS—calculators. T.S. (Office Equipment) Ltd. **(21)**
PLASTIQUE—carbon paper. Ofrex Ltd. **(6)**
PLUS—adding machines. Sumlock Ltd. **(54)**
PORTOGRAPH—executive's door control system. Dictograph Telephones Ltd. **(12 & 37)**
POSTINDEX—visible systems equipment. Art Metal Construction Co. **(42)**
POWERS-FORTY—punched card accounting equipment. Powers-Samas Accounting Machines (Sales) Ltd. **(69 & 70)**
POWERS-ONE—punched card accounting equipment. Powers-Samas Accounting Machines (Sales) Ltd. **(69 & 70)**
POWERS-SAMAS—punched card accounting equipment. Powers-Samas Accounting Machines (Sales) Ltd. **(69 & 70)**
PRIMUS—continuous stationery typewriter attachment, standard register, portable register. Carter-Davis Ltd. **(71)**
PRODUC-TROL—visual control board. Block & Anderson Ltd. **(65 & 75)**
PROTECTOGRAPH—cheque writer. Distributed by Halsby & Co. Ltd. **(59)**

Q

QUALITY—binders. National Loose Leaf Co. Ltd. **(3)**
QUIKFYND—manilla desk wallets. The Stolzenberg Patent File Co. Ltd. **(88)**

R

READESY—shorthand notebooks. Standard Office Supplies Co. **(84)**
RECORDAK COMMERCIAL AND GENERAL—machines for photographically recording documents. Recordak Division, Kodak Ltd. **(87a)**
RECORDON—magnetic dictating machine. Thermionic Products Ltd. **(5)**
REGISTER—continuous stationery. Fanfold Ltd. **(63)**
RELIANCE—intercommunication equipment. The Reliance Telephone Co. Ltd. **(97)**
REMINGTON—portable, standard and electric typewriters. Remington Rand Ltd. **(45 & 55)**
REMTICO—typewriter carbons and ribbons. Remington Rand Ltd. **(45 & 55)**
REX—flat file with manilla binding apparatus. The Stolzenberg Patent File Co. Ltd. **(88)**
REX RECORDER—dictating machine. Office Machinery Ltd. **(8)**
REX ROTARY—stencil duplicator. Office Machinery Ltd. **(8)**
RIVERSIDE—ledgers and transfers. National Loose Leaf Co. Ltd. **(3)**
ROBUST NO. 50—stapling machine. Ofrex Ltd. **(6)**
ROLLINDEX—rotary filing system. Art Metal Construction Co. **(42)**
RONEO—card index, card indexing cabinets and systems. Roneo Ltd. **(64 & 76)**
RONEODEX—visible recording systems and equipment. Roneo Ltd. **(64 & 76)**
RONEO 500—foolscap size duplicator. Roneo Ltd. **(64 & 76)**
RONEO 45 RB—steel office partitioning. Roneo Ltd. **(64 & 76)**
RONEO 150—portable duplicator. Roneo Ltd. **(64 & 76)**
RONEO POLICY—wide printing duplicator. Roneo Ltd. **(64 & 76)**
RONEO U-SERIES—desking and equipment. Roneo Ltd. **(64 & 76)**
RONEOTOL—visible card selection equipment and systems. Roneo Ltd. **(64 & 76)**
RONEO VISIBLE-80—suspended filing system. Roneo Ltd. **(64 & 76)**
RONEO—visible indexes, visible strip indexing equipment and systems. Roneo Ltd. **(64 & 76)**
RONEO VISUAL CHARTS—charting equipment and systems. Roneo Ltd. **(64 & 76)**
ROTAPRINT—printing and duplicating machines. Manufactured and distributed by Rotaprint (Kaye's) Agency Ltd. **(74)**
ROYAL—electric and portable typewriters. Royal Typewriters **(82)**
RUBERY OWEN—filing cabinets, desks, tables, wardrobes, costumiers, planfiles, adjustable steel shelving, lockers and cupboards. Rubery, Owen & Co. Ltd. **(33)**

S

ST. BRIDE—loose leaf ledgers. Moore's Modern Methods Ltd. **(35)**
SAMSON—stapling machines. Ofrex Ltd. **(6)**
SCHED-U-GRAPH—visual control equipment. Remington Rand Ltd. **(45 & 55)**
SECURITY—loose leaf ledgers. Moore's Modern Methods Ltd. **(35)**
SEPIAL—letter sorters. Carter-Parratt Ltd. **(99)**
SHANNOBLIC—adjustable tabbed suspended filing system. The Shannon Ltd. **(20)**
SHANNOGRAPH—flat top suspended filing system. The Shannon Ltd. **(20)**
SHANNOLEAF—visible loose sheet record system. The Shannon Ltd. **(20)**
SHANNOSTRIP—one-line index. The Shannon Ltd. **(20)**
SHANNOVUE—visible card record system. The Shannon Ltd. **(20)**
SIMPLITYPE—interfold style continuous stationery. Fanfold Ltd. **(63)**
SOUNDMASTER—intercom. telephone system. Communication Systems Ltd. **(101)**
SOUNDMIRROR—conference recording machine. Thermionic Products Ltd. **(5)**
SPEEDAC—visible suspension filing equipment. Remington Rand Ltd. **(45 & 55)**
SPEEDISETS—unit sets and continuous sets of forms. Lamson Paragon Supply Co. Ltd. **(106)**
SPIRAL SPRING—flat files with manilla binding apparatus. The Stolzenberg Patent File Co. Ltd. **(88)**
STANDARD—manual and automatic telephone systems, staff locators, press button interphones, executive's indicator, loud-speaking telephone and fire alarms. Standard Telephones & Cables Ltd. **(67)**
STANLEY—flat files with manilla binding apparatus. The Stolzenberg Patent File Co. Ltd. **(88)**
STANRIAN—combined pocket and file. The Stolzenberg Patent File Co. Ltd. **(88)**
STERDY—intercommunication equipment. Sterdy Telephones Ltd. **(103)**
STOLANTIC—collapsible transfer case. The Stolzenberg Patent File Co. Ltd. **(88)**
STOLZENBERG—flat files with manilla binding apparatus. The Stolzenberg Patent File Co. Ltd. **(88)**
STORMOR—steel storage equipment. J. Glover & Sons Ltd. **(23)**
STOR—multi-drawer all steel cabinets. Owen & Randall (Stor Cabinets) Ltd. **(26)**
STRIPDEX—visible indexing equipment. Roneo Ltd. **(64 & 76)**
STUDIO—portable typewriter. British Olivetti Ltd. **(47)**
SUMLOCK—adding calculating machines. Sumlock Ltd. **(54)**
SUPERB—carbon paper. Ofrex Ltd. **(6)**
SUPERFINE—ribbons. Ofrex Ltd. **(6)**
SUPER-FLEET—machine accounting equipment. Moore's Modern Methods Ltd. **(35)**
SWISSA/PICCOLA—portable typewriters. Office Machinery Ltd. **(8)**
SYLVAN WOVE—carbon paper and ribbons. H. M. Rose & Co. Ltd. **(1)**

T

TAN-SAD—posture chairs for office and factory. The Tan-Sad Chair Co. (1931) Ltd. **(62)**
TELEMIKE—staff location systems. T.R. Service, Telephone Rentals Ltd. **(57)**
TELEPORT—house door telephone. Modern Telephones (Gt. Britain) Ltd. **(93)**
TELESOUND—combined intercom. and broadcasting system. Modern Telephones (Gt. Britain) Ltd. **(93)**
TELESPEAKER—telephones and/or loud-speaker. Modern Telephones (Gt. Britain) Ltd. **(93)**
TENNET—filing equipment and binders, etc. London Letter File Co. Ltd. **(28)**
THAWPITYPE—cleaning fluid. Standard Office Supplies Co. **(84)**
TICKOPRES—label, ticket and tag overprinting machines. Dapag (1943) Ltd. **(80)**
TIME-MASTER—dictating and transcribing machines and dictating and telephone recording machines. Dictaphone Co. Ltd. **(77)**
TOMAHAWK—carbon and ribbons. H. M. Rose & Co. Ltd. **(1)**
TOTAX—combined P.A.Y.E. record and wages book. Moore's Modern Methods Ltd. **(35)**
TOTEM—carbon paper, ribbons, stamp pads and endorsing inks. H. M. Rose & Co. Ltd. **(1)**
TRANSEX—celluloid indexing tabs. The Trade Loose Leaf Co. Ltd. **(94)**
TRANSKRIT—carbon spot stationery. Fanfold Ltd. **(63)**
TRIGGER TACKER—stapling machine. Ofrex Ltd. **(6)**
TRIPOLO—electric tabulating machine. The Muldivo Calculating Machine Co. Ltd. **(96)**

U

UNDERWOOD FANFOLD—continuous form writing machines. Underwood Elliott Fisher Ltd. **(19 & 32)**
UNDERWOOD SUNDSTRAND—adding and accounting machines. Underwood Elliott Fisher Ltd. **(19 & 32)**
UNDERWOOD—typewriters. Underwood Elliott Fisher Ltd. **(19 & 32)**
UNIFOLD—document folding machines. Unifold Mailing Machines Ltd. **(90)**
UNIVERSAL SPEED FEED BILLER. Egry Ltd. **(9)**
UTILITY—carbon paper. Ofrex Ltd. **(6)**

V

VAUCANSON—calculating machine. Office Machinery Ltd. **(8)**
VICTOR—adding listing machine. Block & Anderson Ltd. **(65 & 75)**
VISIBLE—ring binders. National Loose Leaf Co. Ltd. **(3)**
VISTADEX—visible index equipment. Bulmer's (Calculators) Ltd. **(44)**
VISTEM—vertical visible card index systems. Carter-Parratt Ltd. **(99)**

W

WHITFIELD—fire resisting book safes. Milners Safe Co. Ltd. **(86)**

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You owe it to yourself and to your business to see this new "Recordon" dictating unit.

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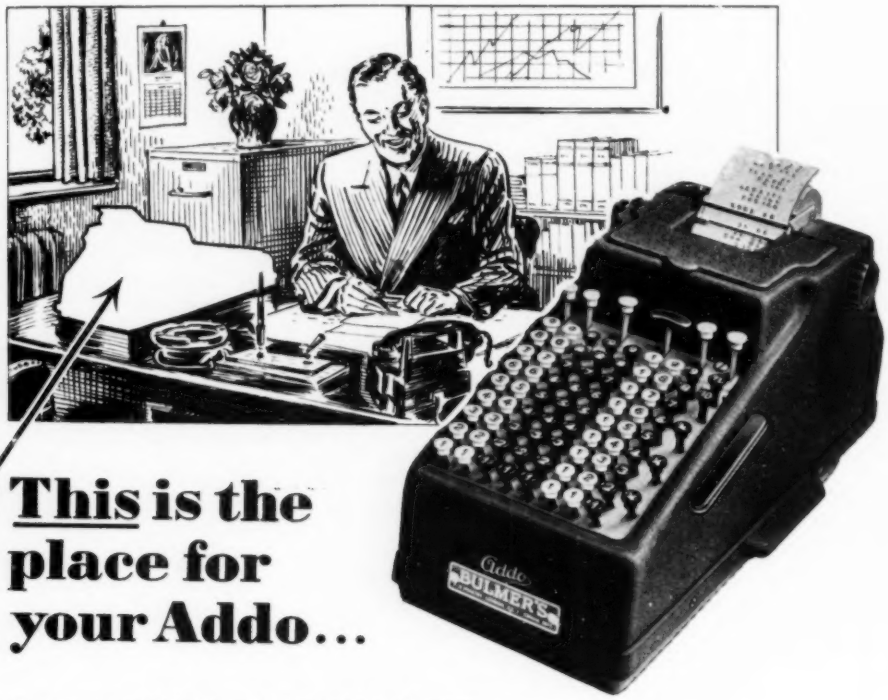

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SALES AND SERVICE THROUGHOUT GREAT BRITAIN

Adding and Calculating Machines

The Monroe CAA-10 calculator.

Block & Anderson Ltd. Stands 65 & 75.

A NEW range of *Brunsviga* hand calculators is one of the main features of Block & Anderson's exhibit at this year's B.E.E. Models cover product capacities from 13 to 20 and there is also a twin machine that provides 13 dials in each product register.

Other machines that come under the adding and calculating classification are the *Marchant*, which is claimed to be the world's fastest electric calculator, and the *Facit* 10-key model, designed for one hand operation. Lastly there is the portable *Victor* adding/listing machine, which is not much larger than a telephone yet has a totals capacity of £999,999 19s. 11d.

British Olivetti Ltd. Stand 47.

A MACHINE of unique capabilities is the *Divisumma* printing calculator which automatically adds, subtracts, multiplies and divides, giving a direct credit balance where necessary and providing a printed record of the operations involved.

Also being shown is the *Electrosumma*, an electric adding/listing machine for sterling work. It automatically gives the credit balance wherever necessary and is extremely simple to operate.

Bulmer's (Calculators) Ltd. Stand 44.

ADDING and calculating machines on the Bulmer's stand are of three makes—the *Addo*, the *Friden* and the *Multo*. There are several models of the *Addo*, and they range from a compact hand-operated adding/listing machine with direct subtraction to the *Duplex* model, which provides sub-totals, totals and a grand accumulative total of individual totals with direct subtraction. All machines are quite portable, silent in operation, and fast.

The new *Ultra-matic Friden* calculator is exceptionally speedy and has a number of interesting features; the instantaneous and completely automatic multiplication and the automatic decimal point in division being just two of them. It is a machine in which the word automatic plays an almost continuous part when describing it. Several models to suit different tasks are available.

Addition, subtraction, division and multiplication can all be carried out on the *Multo* machine, which is small (takes up no more room than a telephone), simple to operate and reasonably priced.

Burroughs Adding Machine Ltd. Stands 48 & 53.

MANY models from the well known range of Burroughs calculators are being shown at this year's exhibition. These include units with six, ten and 14 figure capacities, simplex and duplex type,

Sundstrand electric adding listing machine.

ADDING & CALCULATING MACHINES

hand and electrically operated models and machines with sterling, decimal and fractional keyboards.

Felt & Tarrant Ltd. Stand 83.

FELT & Tarrant Ltd. are distributors of the famous *Comptometer* range of calculating machines. The latest electric models incorporate many improvements resulting in even greater accuracy and ease of operation, as well as long life and reliability.

A number of machines are shown with the outer cases removed so that the workmanship can be inspected.

International Time Recording Co. Ltd. Stand 41.

AN interesting piece of equipment on view at the B.E.E. is the IBM proof machine. It sorts, lists, proves and endorses cheques and other documents in a single operation and thus provides an effective and speedy means of control. A page of cheques is handled only once to accomplish these four functions and an important advantage lies in the proving which reveals errors instantly.

The working area on the machine has been carefully designed to reduce fatigue, ease operation and increase efficiency. The procedure is as follows: the operator scans the cheque; depresses the appropriate classification sorting key; records the amount by means of a 10-key adding keyboard; drops the cheque into the sorting chute; and touches a release bar.

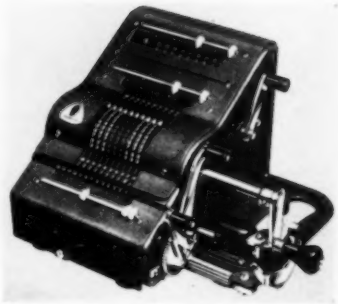
London Office Machines Ltd. Stand 102.

PROBABLY the only machine of its kind in the exhibition, is the *Curta*, a fully portable calculating machine which nevertheless

One of the National range in the new grey finish.

has a capacity of 8 by 6 by 11 and full tens transmission. The machine weighs only 8oz., and can be carried in the pocket or brief case.

In use, it is held in the left hand with the operating handle upwards. The setting levers protrude from the side, and the straight carriage of a normal machine is replaced by a disc, corresponding to the lid of a tin, which can be turned after slightly raising. Negative revolu-



The new Brunsviga model 13 RK.

tions are made by pulling the handle out and turning in the same direction. One clearing lever clears either or both the product or multiplier registers, and the setting levers are cleared individually.

The *Curta* is easy to use and rapid in operation. It is particularly useful "in the field."

Mercedes Sterling Book-Keeping & Calculating Machines Ltd. Stand 27.

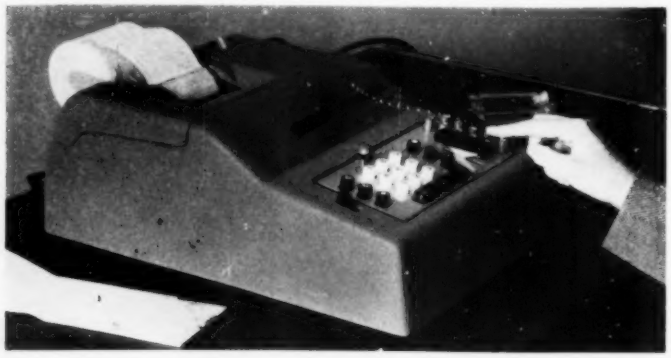
SEVERAL *Numeria* calculators of different types are featured on this stand. The machines calculate in decimals, and can add or subtract in sterling without conversion to decimals. The model 9201 weighs only 13½ lb. and occupies a space of only 9in. by 8in. Capacity is 10 x 8 x 18.

Monroe Calculating Machine Co. Ltd. Stand 50.

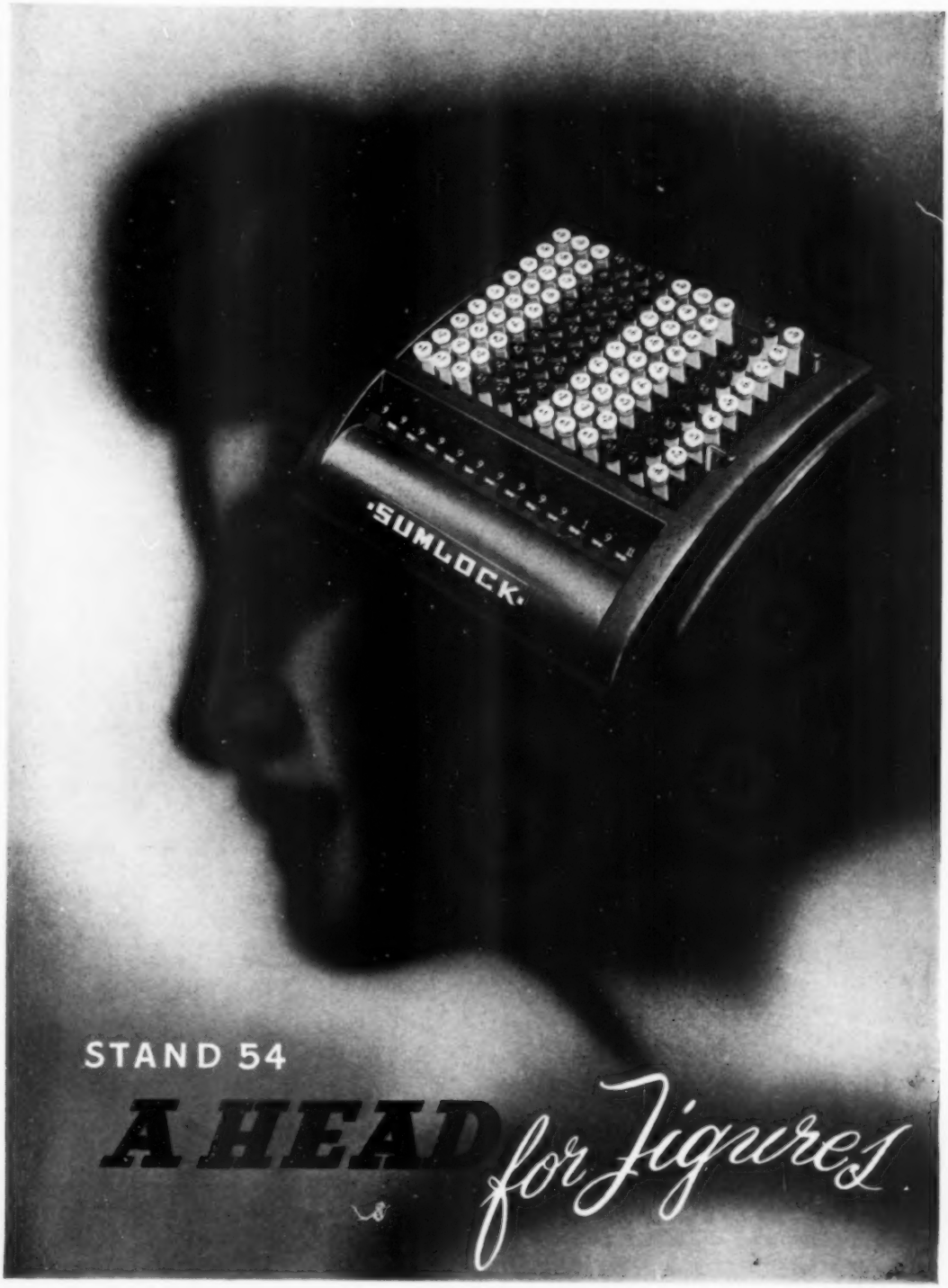
MONROE calculators have been in short supply since 1940, and this is the first time the company have been able to offer their machines to other than current customers. Seven calculators are shown, ranging from a small hand model to a large, high speed electrically driven machine.

Smallest machine is *Model L160-X*, which has eight banks. *Model L200-X* is a 10-bank version of the same machine. *Model LA5-160* is a portable electric machine with automatic division having eight banks and model *LA5-200* is the 10-bank version of the same machine.

First of the ultra high speed



The Olivetti Divisumma printing calculator.


SUMLOCK
STAND 54
AHEAD for figures

ADDING & CALCULATING MACHINES

calculators are *Models CST*-8 and *CST*-10, which are fully electric with automatic shift, clearance, tabulator, division, etc. *Model CSA*-10 has the same features plus several additions.

The Muldivo Calculating Machine Co. Ltd. Stand 96.

AN attractive grey finished Italian adding machine, the *Add-Master*, features a 12-key simplified keyboard. Hand and electrically operated models are available.

Other exhibits include eight models of the *Britannic* hand-operated calculating machine. Many of these have new features, including tens transmission, top register dials and special transfer arrangements. Visitors can also see Swiss-made *Madas* electric tabulating machines.

National Cash Register Co. Ltd. Stands 61 & 78.

A WIDER variety of machines than ever is being shown by National this year. These include the new *EN* models in which all controls are push-button operated by the right hand. Complete with automatic over-draft and an entirely new spacing feature these machines will appeal not only for their handsome appearance but for the remarkable speed with which they can be operated.

Office Machinery Ltd. Stand 8.

THIS firm are showing the Danish made *Contex* which is a five figure key-driven adding machine which is offered at a low price yet is speedy, accurate and compact. It weighs little more than 2lb. and can easily be carried in a brief case.

The operator requires no special training, and both sterling and decimal models are available.

Sumlock Ltd. Stand 54.

THIS company have two groups of machines—*Sumlock* adding/calculating machines and *Plus* adding machines. Full keyboard adding/calculating machines are shown in five 12-column and three nine-column arrangements which include provision for decimal and Indian currencies. The *Plus* adding machines are shown in two six-column, five nine-column and three 12-column arrangements. In addition to £. s. d. and decimals, these include hours and minutes and tons, cwt., qtr., lb. and oz.

The *Sumlock* is a lightweight, compact machine with full keyboard conforming to the standardized arrangement with which experienced operators are familiar. It adds, subtracts, multiplies and divides. Three-fold warning is given when an error has been made.

Plus machines are designed for the one specific purpose of adding and are very simple to operate.

T.S. (Office Equipment) Ltd. Stand 21.

THE *Everest* and *Peerless* calculators are appearing on this stand. The *Everest Z4* model is an Italian machine and manually operated entirely by the right hand. It is key-set, and as the keys are depressed the corresponding figures appear in the visibility register on the left of the machine.

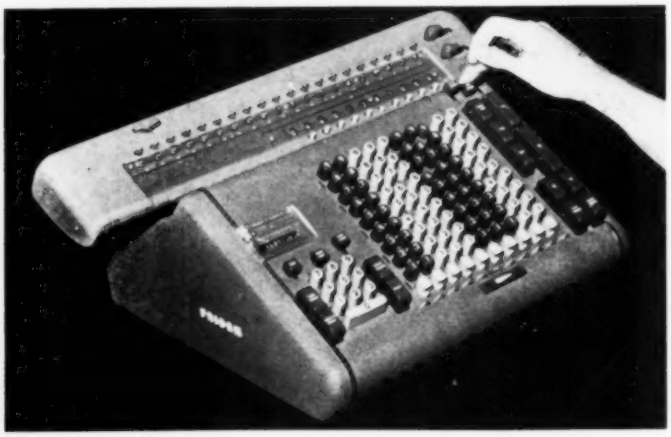
The capacity of the machine is 8 by 10 by 13. Various locks are incorporated to prevent mistakes. Unlike the standard type of calculator, the whole action is enclosed, the carriage moving within the limits of the closed sides. The machine carries out all the usual operations—addition, subtraction, multiplication and division.

Another machine backed by many years of experience is the *Peerless*, which comes from Germany. The *Embee* model is a full keyboard machine with varying capacities, from 8 by 6 by 10 to 10 by 8 by 17, with tens transmission throughout. The machine has two keyboards—the main one directly below the register, and the supplementary multiplication keyboard in one line at the right.

Underwood Elliott Fisher Ltd. Stands 19 & 32.

SEVERAL models of *Underwood Sundstrand* adding/listing machines are being displayed. It is claimed that these machines are simpler to operate because there are only 12 normal keys arranged in natural sequence in a compact area all under the finger-tips of one hand. The keys have been shaped to fit the fingers to give increased keyboard accuracy and more positive control. Light touch operates the feature keys.

Both hand and electric models in 8 and 10 column capacities are available. Portable electric models incorporate "three point control" with the following automatic features: addition, direct subtraction, sub-totals, totals, non-addition and credit balances.



The speedy Friden calculator distributed by Bulmer's.

THE WORLD'S FINEST CALCULATOR..

The most complicated calculations can be worked out almost instantly on the wonderful NEW FRIDEN—the world's finest and most modern calculator. Completely automatic, yet with a simplicity and ease of operation that must be seen to be appreciated. *We will arrange a demonstration anywhere in Great Britain, without obligation.*

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- AUTOMATIC DECIMAL POINT IN DIVISION
- CONSTANT DIVISORS
- INSTANTANEOUS COMPLETELY AUTOMATIC MULTIPLICATION
- VISIBLE MULTIPLIER PROOF DIALS
- CONSTANT MULTIPLIERS
- SPLIT AND NORMAL PRODUCT DIALS
- GRAND TOTALS
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THE 'ADDRESSALL' CARD INDEX ADDRESSING SYSTEM

16 *vital points!*

Over 100,000 users throughout the world

Addresses envelopes, statements, bills, postcards, wrappers, labels, etc.

Absolute accuracy automatically assured

3,000 addresses per hour

Can be made to repeat, skip, duplicate or triplicate any desired address at will

Automatic Selector for selecting and addressing any given name classifications

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Sheet-feed attachment for automatically listing names, numbers, or other data

Models to cover most known requirements

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Does the work in one-tenth of the time

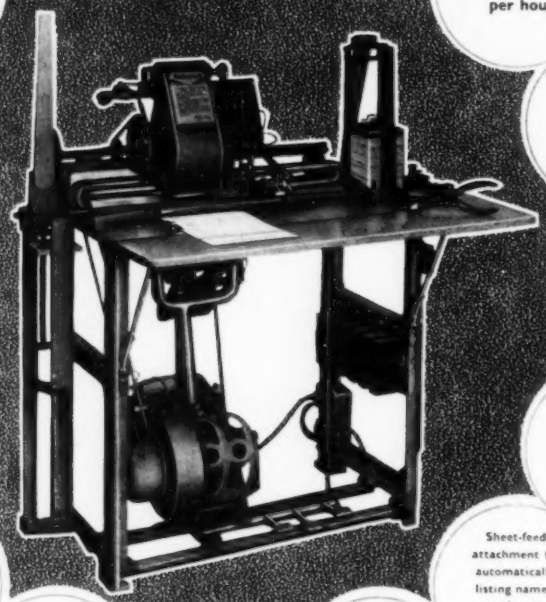
Complete control of all operations

Turns waste into actual profit

Hand, Foot or Electric Drive Models available

Prints face up-complete visibility

Forms a Card Index in addition to an Addressing or Listing Service



Addressall

MACHINE COMPANY · 11-13, SOUTHAMPTON ROW · LONDON, W.C.1. · HOLborn 3571/2

Addressing and Mailing Equipment

The high speed Bandamail 500 letter opener.

Addressall Machine Company. Stand 38.

THE two-in-one *Addressall* system combines a card index with an easily operated and speedy method of addressing envelopes and forms of every description.

Addressall stencils can be typed on any typewriter; are light and clean to handle; are supplied in various colours for easy visual classification, and hole-punched so that the addressing machine itself automatically selects specific stencils and rejects others.

There is an *Addressall* machine to cover every known addressing and sheet listing requirement.

Addressograph-Multigraph Ltd. Stands 79 & 100.

SEVERAL basic *Addressograph Class* 1900 machines are seen on this stand, each with different attachments for performing a variety of functions. Amongst these are: automatic suction feed for envelope addressing; double column lister and automatic selector for rate sheets; single column lister, last impression stop and automatic selector for standard dividend sheets; double column lister with single column feature and special platen for standard payroll and carbon copies thereof; selector, counter, double-bank 6-figure numbering attachment for factory form writing; and regular lister and last impression stop for price and stock lists.

An exhibit which is being shown for the first time is the new punched card control, for use in conjunction with the *Class* 1900 machine. This provides a positive link between the machine and the card sensing unit, the latter acting as a control whereby all punched cards passing through it cause the *Addressograph* machine to imprint or skip those address plates which agree with the cards.

A *Class* 22000 machine with continuous roll feeds for label addressing is shown, together with five hand-operated machines applied to various functions such as work on payroll sheets and order and stock control. Two *Graphotype* machines demonstrate how plates are embossed. Visitors can also see filing cabinets for address plates, and the *Visi-Desk*.

Adrema Ltd. Stand 56.

THE wide range of *Bradma* addressing machines and business systems equipment has recently received additions in an improved roll feed and guillotine unit, a perforated form feed and a punched card link-up unit. All other models in the *Bradma* range have been streamlined and modernized in design.

The roll feed and guillotine is a detachable unit designed to feed plain paper or thin board from a roll to the *Bradma* printing head. After the print impression has been made, the guillotine cuts to required size such things as labels, wrappers, record cards and other forms up to a maximum of 10in. in length by 14¼in. in width.

The perforated form feed unit is an efficient automatic feeding attachment for use with pre-printed continuous stationery.

In addition to the *Powers-Samas* punched card link-up, Adrema have now produced a counterpart for the *Hollerith* machine. Method of operation is the same in each case. Cards representing numbers are fed into a sensing unit where plungers enter the holes and break electric contacts beneath. Resulting electrical impulses in the *Bradma* control select plates "pipped" with the same numbers as the cards for printing, all other plates being passed through the machine without printing. This

The Simplex postal franker by Universal Postal Frankers Ltd.

ADDRESSING AND MAILING EQUIPMENT

control offers considerable advantages in insurance renewal work, all kinds of billing and demand notes and in many other directions.

Block & Anderson Ltd. Stands 65 & 75.

LETTER opening and sealing machines for every type of organization are shown by Block & Anderson, Ltd. The *Bandamail* 200 is a hand-operated letter-opener for firms with a moderate amount of incoming mail. The machine opens letters at the rate of 100 a minute without fear of damage to the contents.

For the larger organization there is the *Bandamail* 500, which is electrically operated. This deals with letters at the rate of 500 a minute.

Another electrically operated machine is the *Bandamail* 300 sealing machine, which has been specially designed to deal with the very large assortment of mail that issues from the modern business concern.

The *Bandarette* is an addressing duplicator which can be used for all short runs, small area copying, and is the perfect medium for addressing envelopes, marking tags, slips, etc., in limited quantities.

The Hayward Co. (Addressing Machines) Ltd. Stand 17.

ONE of the principal machines in the Hayward range of addressing and listing equipment is the *Elliott* model 12 rotary hand crank addresser, which is said to be the most versatile product of its size and price. Forms to be addressed are inserted singly by hand, but the machine has automatic stencil feed, automatic stencil ejector and automatic envelope ejector. Addressing is at the rate of 1,500 envelopes or postcards an hour.

There is also the *Elliott* electric roller print addressing and listing machine, which is fitted with mechanical or electric selector mechanism and works on the punched hole system.

International Coin Counting Machine Co. Ltd. Stand 92.

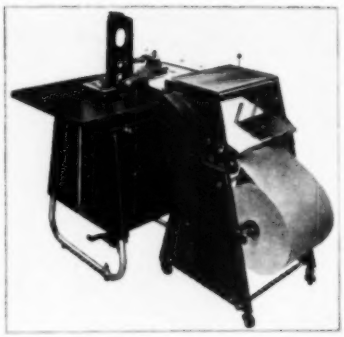
FOUR machines for the mail room are featured by the International Coin Counting Machine Co., Ltd. They are: the *E*-9 and *E*-6*A* letter opening machines, and the *ES*-3 and *ES*-1 envelope sealing machines.

Type *E*-9 is a precision built machine with a smooth and efficient performance. Electrically operated, automatically fed, it opens up to 500 letters a minute safely and consistently; moreover, it is simply adjusted for large and small mail. The electric reduction-geared motor is entirely enclosed, and the high quality rotating cutters are self-sharpening, thus ensuring maximum service with minimum attention.

Type *E*-6*A* is the baby of the range, but it is quite as efficient as the larger model. The automatic feed and adjustment is similar to the arrangement on model *E* 9 but otherwise the machine is designed for manual operation. It opens approximately 150 to 200 letters a minute.

Up to 15,000 envelopes of any reasonable size and thickness can be perfectly sealed in one hour by the *ES*-3 sealing machine. The water is electrically heated and maintained at an even temperature by automatic control. The feed is automatic and the machine is electrically driven.

The fourth machine is the *ES*-1 hand operated sealer with automatic feed. This machine deals with 150 envelopes a minute.



The Bradma Roll Feed by Adrema Ltd.

ICC's Type ES-3 envelope sealing machine.

Roneo-Neopost Ltd. Stands 64 & 76.

A FULL range of *Neopost* postal franking machines is displayed on this stand. Approved by the Postmaster General, *Neopost* machines are designed to speed up the handling of mail in the user's own office and also in the postal sorting offices, thus ensuring that it is delivered to the addressee with the maximum of speed.

Another important advantage is that the handling of postage stamps and cash is completely eliminated. Payment for postage is made by cheque payable to the Postmaster General, thus avoiding any possibility of loss of cash or stamps; it is also possible to fit an advertising block into the machine, advertising any goods or services that the user has to offer—these are easily changed if desired.

The *Neopost* stand also features what is claimed to be the most inexpensive franking machine available in this country. This is free from any compulsory maintenance fees and is suitable for any office with upwards of 12 letters per day.

Bradma

ADDRESSING MACHINES AND BUSINESS SYSTEMS

Are being shown at

STAND 56

Business Efficiency Exhibition

The Business Efficiency Exhibition will afford you an ideal opportunity to see demonstrated the Bradma application that interests you most.

It may be in Direct Mail, Factory Production Control, Payroll Work, Invoicing, Rating, or in any direction which involves printing of repetitive detail. Bradma systems not only save unlimited time and expense, but eliminate typing errors and reduce checking to a minimum. Remember, there is a Bradma system for every addressing problem.

ADREMA LIMITED

TELFORD WAY, LONDON, W.3

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ADDRESSING AND MAILING EQUIPMENT

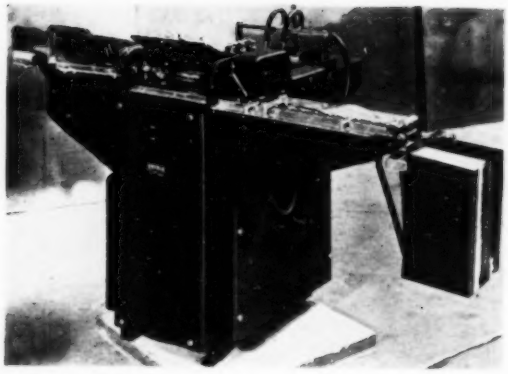
Also shown are electric models capable of handling the outgoing post of the largest commercial undertakings.

Unifold Mailing Machines Ltd. Stand 90.

MAILING machines are among the main exhibits on this stand. The *Model L* is capable of folding documents, inserting them into envelopes, turning and sealing the flaps, all at the rate of 3,000 pieces an hour. It can handle documents ranging from 4in. by 4in. to 8½in. by 13½in. and envelopes up to 9in. by 4in. The folding styles are one or two folds in the length of the document, producing two, three or four panels.

Also shown are *Unifold Model K* folding machines with stroke and fully automatic suction feeds. These machines are fitted with creasing discs at the fold roll delivery. As the document leaves the rolls either one, two or three creases may be made at right angles to the actual folds. These creases may be anywhere across the width of the paper and are in effect further folds. They give the machine the same flexibility of style as one incorporating parallel and cross folds, but without the complications that a machine of this type would have.

A new feature on the folding machines is an automatic packer, which gives perfect packing without interleaving—even when the pieces are very small. Another feature of both the *Inserta* and the *Unifold* machines is that they can be operated by a junior member of the staff.



The Unifold Model L mailing machine.

The basic Addressograph Class 1900 machine.

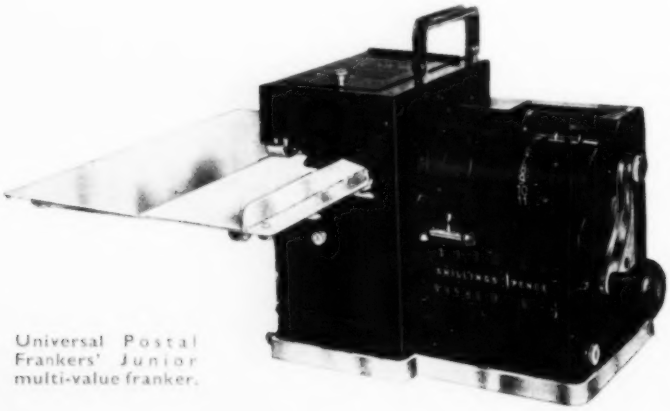
Universal Postal Frankers Ltd. Stand 29.

MACHINES shown by this company include the *Simplex*, *Multi-Value* and *Pitney-Bowes* franking and sealing machines, a coding and overprinting machine, a counting and endorsing machine, and a mail trolley.

The *Simplex* machine has been described as the postal franker for the small firm because it is small and neat, prints any value of postage up to 6½d. in one impression and therefore copes with the new 1½d. printed paper rate, which came into operation on June 1. A post as small as 10 to 20 letters a day is said to justify the purchase of this machine.

The *Multi-Value* machines print up to a maximum value of 29s. 11½d. and deal with foreign mail, parcels and airmail as well as the ordinary inland letter post, while the *Pitney-Bowes* models can frank and seal letters at the rate of 15,000 pieces an hour. The *Coding* machine overprints wrappers, cartons, etc., and the new *Totometer* counts bank notes or other documents with absolute accuracy at the rate of 40,000 per hour.

In addition to the *Simplex*, the *Multi-Value* hand and electric machines and the *Pitney-Bowes* equipment all cope with the new 1½d. printed paper rate.



Universal Postal Frankers' Junior multi-value franker.

FORGERY OF NATIONAL INSURANCE STAMPS

—a business risk that cannot be ignored

Any company director will appreciate the risk his company is running in handling large numbers of national insurance stamps. The many cases of misuse and forgery reported in the press, emphasize the point that these stamps represent a risk not to be lightly ignored.

Remove the risk once and for all by dispensing with stamps and installing a Neopost National Insurance Machine, approved by the Ministry of National Insurance. It is not only safer, it saves time as well. Send coupon for full particulars.

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FRANKING MACHINES

Please send me full information about Neopost National Insurance Machines.

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RONEO-NEOPOST Ltd., Victoria House, Southampton Row, London, W.C.1

Telephone: HOLborn 4933. Telegrams: Romosafe, Westcent, London

WE ARE EXHIBITING AT THE BUSINESS EFFICIENCY EXHIBITION AT OLYMPIA, JUNE 6–16.

TBW3D.

Remington Rand
STAND No. 45-55
BUSINESS EFFICIENCY EXHIBITION

A PRACTICAL APPROACH
to Mechanised Accounting

It is important to view the problem as a whole. Maximum advantages can only be obtained if a survey is made of existing procedures and a clear conception formed of the information which is necessary. REMINGTON RAND maintain a staff of Machine Accounting Representatives who are fully qualified to offer competent technical advice and draw up mechanical schemes to meet particular requirements. There is no need today to make drastic system alterations or to adopt rigid or standard schemes which may be an obstacle to future development and progress.

With the experience available from their various divisions REMINGTON RAND offer, in addition, expert and up-to-date advice in the filing, housing and printing requirements of a modern installation. No other firm can provide the same complete service. Surveys and advice are obtainable without obligation. Write to Remington Rand Ltd. (Dept. AM.14), Accounting Machine Division, 1-19 New Oxford Street, W.C.1, or 'phone CHAncery 8888.

Remington Rand

ACCOUNTING MACHINES

REMINGTON

Foremost

ACCOUNTING MACHINES

Foremost in Adaptability, Quality of Work and Ease of Operation.

Book-keeping & Payroll Equipment

National Class 31 accounting machine.

George Anson & Co. Ltd. (Office Machines). Stand 39.

SIMPLICITY and speed are the keynotes of the *Anson* payroll machine, which produces the worker's tax and earnings record, wage sheet and pay envelope in one writing. Both the *Anson* machine and the *Mercury* multi-post book-keeping recorder, which is manufactured by the same firm, have been redesigned and incorporate a number of new features.

Burroughs Adding Machine Ltd. Stands 48 & 53.

THE Burroughs range of accounting and book-keeping machines is being shown and several new features have been incorporated in some of the models since the last B.E.E.

Among the equipment is the *Class* 78 book-keeping machine, which is capable of meeting the needs of a wide range of applications. Interesting features are the direct subtraction (not by adding complements); printing of results or totals by a simple key depression; entire words provided by single keystrokes; and complete proof of postings and balances.

Carter-Davis Ltd. Stand 71.

THIS firm are showing a P.A.Y.E. wages system and various pen accounting systems. The P.A.Y.E. system is a simple arrangement whereby the employee's wage slip, wage account and payroll records can be entered in one operation.

Halsby & Co. Ltd. Stand 59.

THE new British made *Protectograph* cheque writer is being shown by Halsby & Co. and this machine saves time, improves legibility and gives complete protection from fraud. The imprint of the machine is impossible to alter.

Kalamazoo Ltd. Stand 18.

CLAIMED to be the simplest three-in-one method of preparing sales and purchase accounts, the Kalamazoo *Copy-writer* can be seen on Stand 18. It can also be used for wages records and offers a substantial saving in time.

A range of up-to-date accounting equipment forms another part of the exhibit.

Lamson Paragon Supply Co Ltd. Stand 106.

A COMPREHENSIVE selection of *Paragon* carbon copy books and loose leaf binders is

The new Sundstrand statistical tabulator.

BOOK-KEEPING AND PAY-ROLL EQUIPMENT.

being featured on Stand 106. They cover many diverse purposes.

Manifoldia Ltd. Stand 34.

PAYROLLS, receipts, cheque writing, sales and purchase ledgers and sales records are but a few of the jobs that can be prepared on the *Manicopy*. This simple and compact appliance is easy to operate and, for instance on P.A.Y.E. work, the earnings record card with income tax deductions is prepared simultaneously with the payroll and the employee's pay slip.

A number of other time saving products is being shown.

Mercedes Sterling Book-Keeping & Calculating Machines Ltd. Stand 27.

SHOWN for the first time on this stand is the Mercedes all-electric automatic balance book-keeping machine. It can handle all general purpose accounting work and is easily changed from one application to another and incorporates automatic clearing of totals and balances.

Another book-keeping machine is the model *SR* 22 which is a versatile unit that can deal with sales and purchase ledger posting, cost and stores accounts, payroll and P.A.Y.E records, etc.

Also on display is an all-electric invoicing machine.

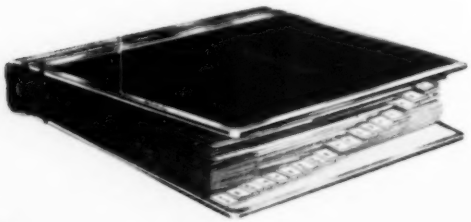
Moore's Modern Methods Ltd. Stand 35.

LOOSE-LEAF binders and over 200 standard rulings for every kind of accounting and record keeping are being shown by this company. The binders include the latest four-post model which is available in various sizes.

The *Office Totax* (for salaries) now joins the range of tax combined P.A.Y.E. wages books. All details are kept in the one book which eliminates the completion of income tax cards. No time is wasted in referring back to previous weeks' entries because a unique window arrangement shows the cumulative weekly totals.

As Moore's Modern Methods specialize in equipment and precision stationery for accounting machines, they are showing a comprehensive selection from their wide range.

Right, Foremost 500 Series accounting machine. Below, Burroughs Class 78 book-keeping machine.



Shannoleaf loose leaf ledger.

The National Cash Register Co. Ltd. Stands 61 & 78.

ONE of the main attractions on the National stand is the new *Class* 31 direct entry accounting machine, which is the latest addition to National's range of business equipment. The basic design bears some resemblance to the well-known and established *Class* 3000 machine: it has a full adding machine keyboard (but with greater capacity); a typewriter for unlimited narrative description; and a fully visible printing point allowing the operator to maintain a visual check along the whole length of entry.

It is exceptionally flexible in operation and can be applied to every conceivable type of accounting work, yet it remains remarkably simple to operate. One of the main features is the ease with which control bars can be changed, allowing the machine to be switched from one job to another in a few seconds.

Special points of interest include the fact that the typewriter is fully electrified, and the carriage and platen are moved by a unique fluid drive mechanism controlled by oil pressure. There is direct subtraction in all ten registers and all balances—both negative and positive—are computed automatically.

In addition to this newcomer the *Class* 3000 machine is being featured in its new grey finish, together with examples from the *Class* 2000 range.

National Loose Leaf Co. Ltd. Stand 3.

LOOSE leaf books for many book-keeping purposes are the feature of this company and ex-

SPECIAL ANNOUNCEMENT

of the National Cash Register Company Ltd.

The latest addition to the

National range of business machines

the new

National

CLASS 51*

DIRECT ENTRY ACCOUNTING MACHINE

will be on public exhibition

for the first time in Britain

on STAND No. 61/78 at

The Business Efficiency Exhibition

OLYMPIA

from June the 6th to the 16th

* A NEW CONCEPTION OF AUTOMATIC ACCOUNTING

BOOK-KEEPING AND PAY-ROLL EQUIPMENT.

amples from their comprehensive range are being shown on their stand. These include *A.K.* thong ledgers and binders, *Riverside* ledgers and transfers, *Blue Diamond* books, *Blue Standard* binders, visible ring books and price books.

The loose leaf principle has now been applied to almost every commercial, professional and private purpose, and National claim to have examples that will meet every requirement. Quality and a high standard of workmanship are features of this firm's products.

The latest model posting tray by Kalamazoo Ltd.

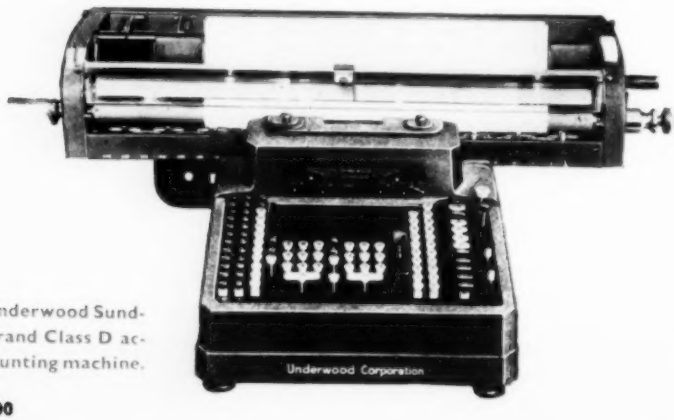
Remington Rand Ltd. Stands 45 & 55.

BOTH the 500 and 600 series *Foremost* accounting machines are being demonstrated by Remington Rand. The 600 series embodies all the latest developments in accounting machine design and is completely electrified. Features include automatic printing of balances and tabulation and column selection. Several related records can be written up simultaneously with perfect legibility.

The 500 series possesses most of the automatic and electric features of the previous model and has facilities for combining operations. Extremely adaptable, it has direct subtraction in all registers—the number being limited only by the width of the carriage.

Visitors will see how results are quickly obtained with the minimum of effort, and the applications being dealt with include sales and bought ledgers with analysis, payroll records, costing, budgetary control and cheque writing.

Another product which comes under the book-keeping classification is Remington vertical visible filing equipment, which speeds up ledger posting and automatically reveals overdue accounts.



Underwood Sundstrand Class D accounting machine.

Roneo Ltd. Stands 64 & 76.

A SECTION of Roneo's display is being devoted to machine posting trays with cabinets for storing them and trolleys for transporting them to machines.

Prominently featured is the new *Flyweight* tray first introduced at last year's B.E.E. In designing the tray special consideration has been given to the requirements of the operator, with the result that it is extremely light yet very strong. Made principally of aluminium alloys and plastics, it can easily be handled by female machine operators.

Also on show is the *Roneotol* system of visible card selection which enables account cards to be located and returned in the minimum time.

Roneo-Neopost Ltd. Stands 64 & 76.

BOTH of the machines that are being displayed—and which come under the category of book-keeping equipment—are of direct interest to the business executive.

The National Insurance machine

IT'S HERE!

underwood

FOR OVER 50 YEARS THE ACKNOWLEDGED TYPEWRITER LEADER OF THE WORLD

Now in production . . . together with a new and comprehensive range of Accounting and Adding Machines . . . at our English Factories.

SEE IT AND TRY IT

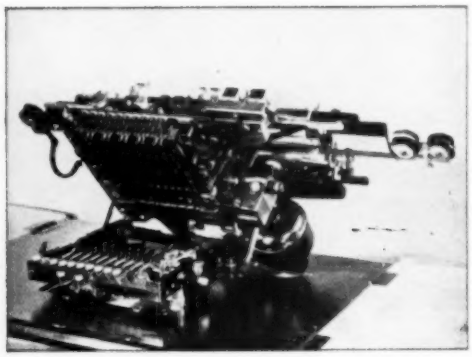
on Stands 19/32 at the Business Efficiency Exhibition, Olympia, June 6-16.

UNDERWOOD
ELLIOTT FISHER
SUNDSTRAND

Speed the World's Business

UNDERWOOD ELLIOTT FISHER LTD · 4-12 New Oxford St., London, W.C.1. Tel. CHA 3131 · Factories · Brighton, Sussex

"Mercedes" has meant mechanisation for twenty-five years!



This unusual view shows a Mercedes Accounting Machine open for servicing. Hours of time are saved by this accessibility feature. Note also the unique double-ribbon giving up to four ribbon-written copies.

Whatever Machine Accounting, Invoicing or Calculating problem you may have, it is likely that MERCEDES equipment can deal with it in the best possible manner. If it cannot, you may be sure we shall say so at once, because MERCEDES is always sold to fit the job exactly.

We hope you will visit us at Stand No. 27 Olympia Business Efficiency Exhibition, but all through the year you can get honest expert advice on any of the following problems:—

Sales and Purchase Ledger posting, with or without analysis.
Cost Accounts.
Stores Records.
Payroll and P.A.Y.E.
Gas and Electricity Billing.
Bank, Insurance and Public Utility accounts.
Statistical and other special work.

MERCEDES STERLING

BOOKKEEPING AND CALCULATING MACHINES LIMITED

60 ST. PAULS CHURCHYARD, LONDON, E.C.4.

Telephone: CENtral 7351

BOOK-KEEPING AND PAYROLL EQUIPMENT.

offers employers a method of speeding up the stamping of employees' National Insurance cards and offers a much greater degree of security against loss and fraud. The procedure is extremely simple and makes the system speedy and flexible, irrespective of whether there is labour movement or otherwise.

The other product is the *Neopost* cheque signing machine which does away with the irksome duty of signing cheques, share certificates, dividend warrants, etc. It is the only signature machine of its kind made in Britain and the ingenious combination of two independent locks, coupled with a detachable signature plate and a recording meter provide effective protection against misuse.

The Shannon Ltd. Stand 20.

THE advantages of the new *Shannoleaf* loose-leaf ledger system can be examined on this stand. For instance there are no keys or cumbersome mechanisms. A simple depression of a lever opens the book for the removal or insertion of any record; similarly a space can be created at any point for another record.

The book is streamlined and only 2¼in. thick and it takes up little space. An ingenious method of "compensating" ensures a flat writing surface at any part, and the sheets are securely held by prongs at such frequent intervals that the records simply cannot go askew.

A wide range of standardized records is carried in stock to cover most purposes but special designs can be produced to a customer's specifications. Standard records cover such things as stores and control, sales and purchase ledgers, personnel records, hire purchase and sales.

Underwood Elliott Fisher Ltd. Stands 19 & 32.

YET another machine which is making its first appearance at this year's B.E.E is the Underwood Sundstrand statistical tabulator. This machine is now being produced at Underwood's Brighton factories and incorporates two registers, each with direct subtraction and credit balance features. The registers can be automatically engaged, either independently or simultaneously.

This model has a 13in. automatic cross tabulating carriage fitted with a shuttle feature, providing entirely automatic selection of functional features and the control of the carriage movement within a predetermined zone. A normalizer immobilizes the carriage and instantly varies the equipment into a fully comprehensive duplex adding machine.

In brief, the machine combines all the important features of the Sundstrand adding machine with those of the Sundstrand range of accounting machines. Besides this important development, the company are showing other examples from their impressive range. These include Underwood Elliott Fisher writing and accounting machines with the exclusive flat writing surface and Underwood Sundstrand accounting machines, which can cope with every book-keeping job.

COUNTING THE COST

DEFINAC ACCOUNTING makes **ONE** operation of two, three or even more entries. It eliminates posting and posting errors, furnishes control sheets for any desired set of figures, and, as a by-product, yields statistical information of immediate value for managerial decision.

DEFINAC ACCOUNTING can be applied in every department of the counting house :: Sales and Purchase Ledgers :: Statements and Remittance Advices :: Receipts and Cheques :: Commission Accounts or Departmental Stock :: Private Ledgers and Pay Rolls :: Stores Control and Factory Costs :: or the more intricate problems of integrating financial and cost accounts—all will benefit by **DEFINAC** methods and by the advice of the **DEFINAC** expert. Strict specialisation has given us the opportunity of acquiring unrivalled experience of this type of accountancy and its "manifold" problems—experience at your service for the asking.

The first name in multiple hand posting, **DEFINAC ACCOUNTING** saves both time and trouble: by co-ordinating so many operations into one, errors in transcribing figures from one book to the other are made impossible.

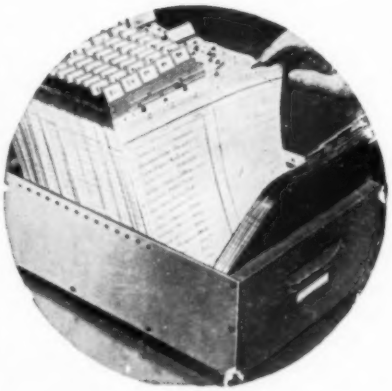
DEFINAC equipment therefore quickly earns its cost and its keep. In its streamlined efficiency it avoids all unnecessary complications and remains unchallenged for posting speed.

DEFINAC VISIBLE, the last word in Visible Records, makes every card instantly accessible. There is no fumbling or thumbing over unwanted cards. Every card is at the operator's finger tips, located or replaced at once, its absence from the tray is spotted at a glance, and mis-filing entirely prevented.

As a **VERTICAL** Visible Record, **DEFINAC VISIBLE** combines the compactness and high capacity of the usual type of posting tray with its own unique advantages. Two basic models are supplied and numerous arrangements are possible to adapt the system to every individual need. The **DEFINAC** range of trays and cabinets covers all requirements, from the very large to the smallest.

Units for fitting into desks and filing cabinets are now available.

Definac **VISITABS** (reg. Trade Mark) offer an unprecedented wealth of signalling facilities. They stay with the card whether it is at rest in its tray, or pulled for posting or reference. They stay put and even pass through machine or typewriter. Any record, whether in trays, drawers, or posting binders can be adapted for **DEFINAC VISIBLE**, and current cards can be converted without re-wiring.



DEFINAC VISIBLE is ideal as Machine Posting Equipment and is, as a matter of course, incorporated in all **DEFINAC ACCOUNTING** installations.

If you are concerned with organisation and method in **ANY** branch of your concern, an early investigation of **DEFINAC** methods is indicated, and we shall be glad to consult with you without obligation.

Definac
LIMITED

22 HOCROFT AVENUE, LONDON, N.W.2.
Tel: HAM 0261.

Business Efficiency Exhibition, Stand No. 22.

I've got half a mind to quit!

Even half a girl can get mad over a mess like this. She wouldn't be half a girl if she had the right business forms to work with. As it is she is forced to spend half her time on useless paper work . . . waste half the money she is paid. She has to fuss with carbons—they *should* come already in place. She has to type different forms for each department—they *should* be all in one.

As they should be, that is how they *are* with business forms produced by Fanfold Ltd. Fanfold trims every waste move from typing . . . simplifies distribution . . . controls all copies. Fanfold Ltd., *combine* forms so that one writing serves all concerned.

The result ? No more half girls—all their time is *productive* time. The cost? It is the cost of *completing* forms that counts. The procedure? Call your Fanfold Technical Adviser . . . he knows at once the best form for any business need. No obligation of course.

Fanfold Ltd

NORTH CIRCULAR RD., LONDON, N.W.2

Telephone: GLAdstone 5477 (4 Lines)

and at BIRMINGHAM, CARDIFF, MANCHESTER, SHEFFIELD, GLASGOW, DUBLIN & BELFAST

PLANNERS OF SYSTEMS FOR ECONOMY OF TIME, LABUOR AND MATERIALS IN THE OFFICE

Fanfold for Forms

Fanfold for Forms

Cash Recording and Handling Equipment

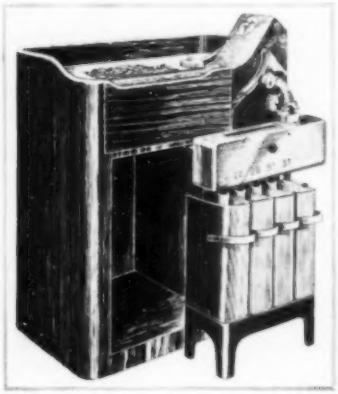
Carter-Davis Ltd. Stand 71.

DESIGNED to take continuous stationery, and fitted with a continuous carbon roll, the *Primus* standard register on display is available either with or without a cash drawer. It will take forms in three sizes from 6in. by 4in. to 8½in. square.

A light-weight portable model, operating on the same principle, is also on show.

Egry Ltd. Stand 9.

WEIGHING only 20oz., yet holding 50 duplicate or triplicate sets of forms, the *Minipak* portable register is claimed to be the smallest and lightest unit of its kind on the market. It will produce one or two carbon copies of any essential routine form with one writing.



I.C.C. type F.4 counting machine.

Another completely new portable register which is being displayed is the *Portapak*. This model is larger than the *Minipak*, taking forms 5¾in. wide by 8½in. deep.

With security in mind, designers of *Elite Tru-Pak* registers have produced a unit which retains a copy of forms inside the *locked* body. Alternatively, a dissected analysis of pre-selected items can be recorded on a summary sheet which moves forward at ½in. intervals.

International Coin Counting Machine Co. Ltd. Stand 92.

COIN counting by hand can be a monotonous job demanding both time and attention. By machine, it can be a speedy, accurate and fool-proof process.

Machines on display at this stand demonstrate how coin counting and sorting can be done at rates up to £1,200 per hour. The *Type F-4* automatically feeds and sorts all coin denominations, showing totals on special instruments. Hand and power operated models are featured.

Lamson Paragon Supply Co. Ltd. Stand 106.

SHOWN for the first time, the new three-drawer *Autographic Sales Register* gives "three in one" performance. Each cash drawer is synchronised with the bill issuing mechanism, ensuring that sales records and cash takings of each assistant are kept separate.

Another unit which also provides accurate fool-proof checking —in this case, of written records —is the *Paragon Timeprint Register*. Synchronised with a *Magneta* electric clock, the unit automatically prints inserted records with the date and precise time of issue.

The National Cash Register Co. Ltd. Stands 61 & 78.

CASH registers to suit the requirements of every size and kind of business are on display at this stand. And all but two or three of the units shown are British products from the company's Dundee factory.

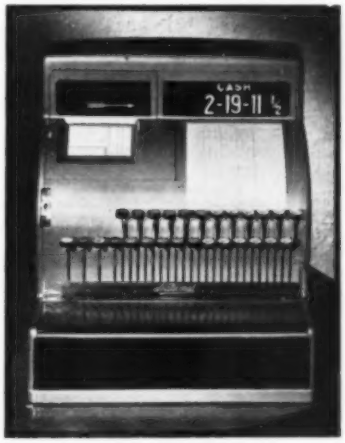
The new *Credit Sanction System* on display is also of interest to sales departments of both large and small firms. The two models shown demonstrate the "remote control" aspect of the system which provides rapid automatic sanction of the sales bill through a telephone hook-up between credit and sales departments.

Paragon sales register, model 6003.

W. H. Smith & Son Ltd. Stand 66.

MODELS of the well-known *Alacra* range of registrators including the desk, cash drawer and portable types are being shown on Stand 66.

Clear and accurate multi-copy hand-written forms are produced on these units using continuous sheets, positively controlled and easily removed.



National 100 Class cash register.

"What's she got...
that I have'nt?"

PRIMUS

CONTINUOUS STATIONERY

The greatest time saver in the Office

For use on **ALL** *Typewriters — Teleprinters*
Accounting and Billing Machines

PRIMUS STANDARD REGISTER

For HAND-WRITTEN RECORDS, the Primus Register used in conjunction with Continuous Stationery ensures the same speedy, smooth operation, while a copy automatically locked in the machine provides your auditor with a check on each transaction.

CARTER-DAVIS LTD.

QUEEN ELIZABETH ST., LONDON, S.E.1. *Tel: HOP 0204-5-6*

Branches at: BIRMINGHAM—MANCHESTER—DUBLIN—GLASGOW

Continuous Stationery Attachments

Carter-Davis Ltd. Stand 71.

THE virtue of continuous stationery is that it can be used with so many types of office equipment, including typewriters, billing machines, tabulators, teleprinters, etc. Carter-Davis are showing their *Primus* brand of continuous stationery, which is made on the interfold system and consists of an unbroken chain of form sets made up into flat packs.

Its use saves a great deal of time and ensures the smooth flow of documentation work. The *Primus* typewriter attachment, which is also shown, adds speed to the process.

Egry Ltd. Stand 9.

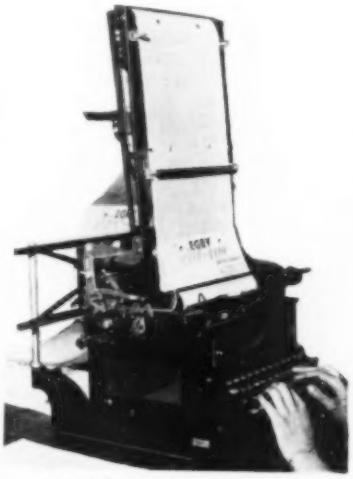
THE *Universal Speed Feed* biller, featured on this stand is more than a typewriter attachment: it is an entirely independent unit which will operate with billing, book-keeping and accounting machines as well as most makes of standard typewriters.

With its new improvements, the biller eliminates unproductive and time wasting operations in the preparation and typing of routine forms. With *Egry* continuous stationery and special carbon paper, it becomes a complete and automatic system for handling all work involving carbon copies.

Fanfold Ltd. Stand 63.

FASTER addressing of all types of documents produced in continuous form will result from a special continuous form feeding device which has been produced by Fanfold, Ltd. for use with addressing machines. This equipment is being shown for the first time. The device works with electric Addressograph-Multigraph, Addressall and Adrema machines, and it has its own independent electric drive and a speed of 60 to 80 impulses per minute.

Other Fanfold exhibits include *Fanfold*, *Simplitype* and *Register* continuous stationery; *Transkrit* and *Karboprint* carbon spot stationery and *Carbon* snap-out sets.



Speed-Feed unit by Egry Ltd.

IBM electric typewriter with Alacra dual feed attachment.

Imperial Typewriter Co. Ltd. Stand 10.

TO meet the increasing demand for a complete typewriter capable of dealing with Fanfold or Interfold stationery, the Imperial Typewriter Company have produced a special continuous stationery machine. This model is particularly useful for invoice work, as it takes the documents in continuous form and enables them to be typed without being removed or having to be interleaved with carbon paper. Carbon paper is fixed on a special frame at the back of the machine and fed in between the forms automatically.

The company supply steel and wood desks specially designed for continuous stationery typewriters.

Lamson Paragon Supply Co. Ltd. Stand 106.

IN a multiple stand described as "the complete business form service," it is obvious that continuous stationery must play an important part. A complete section of the Lamson exhibit is devoted

CONTINUOUS STATIONERY ATTACHMENTS

to continuous stationery, showing the mechanical and manual applications.

The visitor sees *Paragon* continuous forms applied to mechanical writing on typewriters, teleprinters, addressing machines and punched card machines. Two types of continuous forms—Fanfold and Interfold—are shown applied to typewriters.

Also to be seen is the application of continuous one-time carbon forms to teleprinters, punched card machines and addressing machines. Complementary exhibits are continuous form decollators for separating forms and carbons after completion, and various appliances for detaching single forms or unit sets from the continuous lengths.

Manifoldia Ltd. Stand 34.

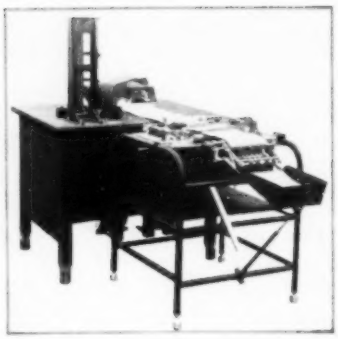
ALL the advantages of continuous stationery are brought within the reach of the very small business by the *Manibar*, a simple and inexpensive device which enables continuous stationery to be used on standard typewriters. With the *Manibar*, all the time is saved which is normally wasted inserting carbons and jogging loose forms into alignment, thus the productivity of any typist is increased by a substantial margin.

W. H. Smith & Son Ltd. Stand 66.

CONTINUOUS stationery applied to a very wide range of office machines is shown by W. H. Smith & Son, Ltd. The exhibits include a Hollerith tabulator fitted with an *Alacra* pinwheel feed attachment with automatic sensing device, and a Powers tabulator with pinwheel platen which ensures the accurate registration of type impressions.

An Adrema addressing machine is shown equipped with a pinwheel feed attachment which enables accurate form control to be maintained at the highest speeds of which the machine is capable. An Olivetti typewriter with pinwheel platen shows how accurate form control speeds up repetitive typing.

An even higher rate of output is demonstrated by the application to an IBM electric typewriter of an automatic line finder.



Paragon Form-Feed and Detacher.

The rapid production of documents where copies are required in two different forms (e.g. receipts and paying in sheets, payslips and the payroll) is demonstrated with a National 3000 accounting machine.

Finally there is an imprint separator, a device for printing a date or signature on to documents at the same time as they are divided from a continuous run into single units.

Stand No. A89

Econojet Typewriter Attachment

The speedy and easy handling of multiple forms is brought within the scope of the ordinary typewriter by fitting the Econojet Attachment. Light, sturdily constructed for long service, the Econojet ensures accuracy of alignment and registration throughout all copies, and in no way interferes with the normal functions of the typewriter. The automatic interleaving of the carbons commends itself to the typist, and the operation is of the simplest description.

SEE IT DEMONSTRATED ON STAND A89

PETTY & SONS LTD

MANUFACTURERS OF

CARBON COPY BOOKS and FORMS of all types, MULTIPLE CONTINUOUS STATIONERY SETS, INVOICES, ADVICE NOTES, RECEIPT BOOKS, PURCHASE ORDERS and NUMERICAL PRINTING in all its applications

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The finest cotton goes into the manufacture of all our typewriter ribbons — and ensures a ribbon that will give clarity, neatness, efficiency and a much longer life.

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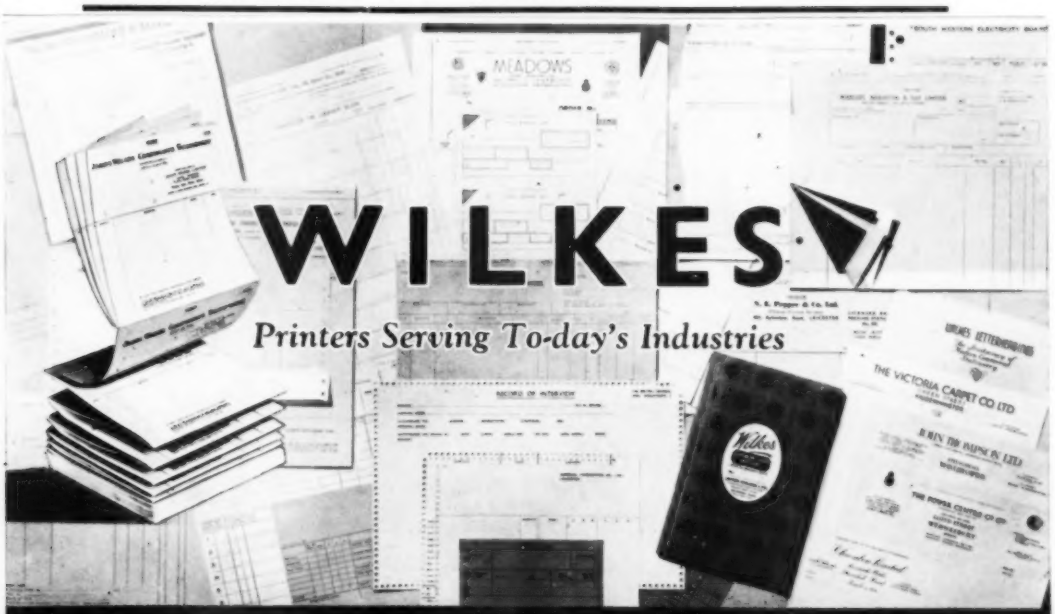


JAMES WILKES LIMITED

MOXLEY ROAD WORKS, BILSTON

Remington Rand
STAND No. 45-55
BUSINESS EFFICIENCY EXHIBITION

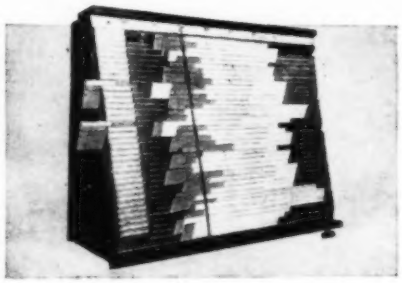
The problem of material and labour shortage

To make the most of machine-shop productivity, management needs an hour-by-hour picture of each machine's loading.

You know the capacity of your machines . . . but how quickly could you state their present loading? What would be necessary to find out? A frantic search through files, orders, job cards . . . hurried telephone calls about the works . . . broadcasts for key personnel?

Or the instant evidence of an efficient visual record?

The Machine Load Planner (illustrated) will show the jobs each machine has to do, is doing, or should have finished. It will state the target dates and record the performance so far. IT WILL INCREASE MACHINE UTILISATION BECAUSE IT WILL REVEAL THE IDLE GAPS. Being flexible, it allows immediate adjustment for priorities. And it will do all this with far less clerical effort than any other method. With Remington Rand Systems, executive energy is freed for concentration on expanding export markets or for meeting rearmament's urgent needs.



Remington Rand Systems

MAKE PRODUCTION CONTROL EFFECTIVE

Write to-day for descriptive literature on Machine Load Planner to:

REMINGTON RAND LTD. (Dept. PL.14) Systems Division, 1-19 New Oxford Street, London, W.C.1
Telephone: CHAncery 8888

SECTION SIX

REVIEW OF EXHIBITS

Controlling and Planning Equipment

Blick Time Recorders Ltd. Stand 25.

NEW and intriguing exhibit by this company is the Blick staff locating system, which makes use of existing wall clocks. These are very simply adapted by illuminating individual dial numbers either separately or in combinations, whilst the control unit provides selection and steady or flashing signals.

Blick products also include time recorders, watchmen's patrol clock

International Superelectric time recorder.

systems, master clock systems and sound signal apparatus. Besides the time recorders themselves, job timers and time and date stamps which are designed to fill the needs of a wide section of industrial users, are also manufactured.

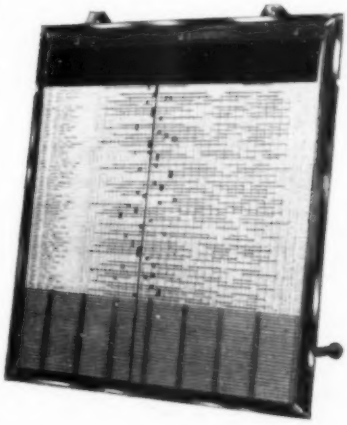
Here again there is a product being shown for the first time. This is a modern metal-cased card-system time recorder which is mechanically driven, thus eliminating both power-cut troubles and the expense of installing a master clock system.

Where centralized control is required, Blick have the answer with the master clock system. This controls all time recorders, job costers, office wall clocks, factory hooters and bells, giving accurate time and signals everywhere in the organization.

Finally there is the Blick watchmen's clock system, which has proved to be a decisive influence in the safeguard of premises and the prevention of crime.

Block & Anderson Ltd. Stands 65 & 75.

AN extremely versatile and flexible medium for charting facts against time is the *Planflex*, a new development by Block & Anderson, which is being shown for the first time. A single *Planflex* unit provides coverage for 50 subjects, maintained in alphabetical or numerical sequence. Colour plays an important part, operating in conjunction with a background "grid" and flexible transparent item strips. The signalling material is unique in that it can be written or typed on, is self adhesive, and can be removed and replaced as many times as required without losing its adhesive qualities.



Sched-U-Graph visual control chart.

Block & Anderson have three more exhibits concerned with production control. These are the B and A *Simplex* machine, the *Banda Line Poster* ledger posting machine, and the *Produc-Trol*, which is a visual control board. The *Simplex* is a spirit duplicator which can reproduce any portion of a master. Its contribution to effective production control is therefore found in the issue of documents dealing with material, operations, routing, progress, wages, inspection, etc.

TR night watchmen's supervisory control unit.

The *Line-Poster* is a ledger posting machine that automatically transfers original entries to ledger cards, statements, statistical records, earning cards, etc. Original entries are made on an ordinary sheet of paper with a hectographic carbon sheet behind it. This master sheet can be handwritten, typed or prepared on any accounting or tabulating machine. After placing the master on the *Line-Poster*, it is only necessary to feed the various ledger cards, slips, statistical records, etc., and

CONTROLLING AND PLANNING EQUIPMENT

depress the treadle for each posting. The machine reproduces every line of entry from the negative master into positive print.

The *Produc-Trol* board makes use of the visible edge card record in conjunction with the string and signal peg method of graphically representing industrial or business facts. The board can be applied to budgetary control, maintenance control, stock and cost control, etc.

The Banda Line Poster.

Frank R. Ford Ltd. Stand 15.

THE larger organization that is anxious to have a machine capable of dealing with production control will be more than interested in the *Multilinex* dual purpose systems machine, which is specially designed and constructed for line selection work on production and planning.

The *Multilinex* eliminates bottlenecks in production and sales control, for it enables the operator to obtain complete details of a production or sales order from a single master or original. Immediately afterwards the operator can extract information for use by departments or by individuals in the case of production orders.

Advantages include accurate planning of flow of work; control of costing and materials; and reduction of time which is so often wasted by operators in sorting out precise instructions from a job sheet containing matter which does not affect them.

The *Multilinex* is a spirit process machine, and requires no inks, stencils or gelatines.

International Time Recording Co. Ltd. Stand 41.

FOR some years past this company have been extending the manufacture of electric time equipment in Britain, and two years ago they went over to the British production of the latest type of time recording machine—the International *Superelectric*.

The *Superelectric* time system provides every type of organization with means of co-ordinating activities and conserving time. A master time control automatically maintains correct and uniform time throughout a wide variety of recording units, providing printed records of employee attendance, time on the job, and so on. The system possesses the exclusive feature of automatic supervision, ensuring uniformity and accuracy of all units regardless of the mains supply.

Time recording, time indicating and signalling equipment is available for every organization. Individual units include *Superelectric* attendance time recorders, job time recorders, programme control equipment, electric secondary clocks, electric chimes, electric personnel signalling equipment, electric time stamps and the International *Ticketograph*.

Attendance time recorders produced at the London works are being shown for the first time. These machines provide clear, accurate, individually printed card records of the arrival and departure time of employees during each pay period. They operate by the mere insertion of the card, and a distinctive feature is the direct-read indication of the time on the recorder instead of the usual clock dial. Red records automatically indicate lost time and overtime.

The Fordigraph Multilinex.

Remington Rand Ltd. Stands 45 & 55.

RECENT developments in chart presentation are seen here in the *Graphdex* and *Sched-U-Graph* systems. Anything that can be expressed in graphic form can be charted clearly and with small effort on *Graphdex*. The signalling possibilities are endless and the system can be made to match individual requirements, such as sales targets and performance, attendance and progress.

Graphdex control is based on a

Full marks for efficiency . . .

The Secretary whose work is well organised is indeed a treasure. That air of quiet confidence, however, usually comes from knowing that even a good memory needs the backing of efficient records. The Kalamazoo Minute Book is to-day used everywhere by enterprising Secretaries who are anxious to save time both inside and outside their meetings. Does *your* Secretary get full marks ?

VISIT OUR STAND No. 18 AT THE BUSINESS EFFICIENCY EXHIBITION, OLYMPIA, JUNE 6th—16th

Kalamazoo *makes the most of the minutes.*

KALAMAZOO LTD · NORTHFIELD · BIRMINGHAM 31

CONTROLLING AND PLANNING EQUIPMENT

slotted panel unit which is bolted to other units to build up a graph board of any size or shape that may be required. Signalling is simple and flexible, but bold and effective. Here are some of the variations:

Half-inch square signals clip into panel slots and are available in eight distinctive colours. Progressive signals operate in a signal tube which clips on to the *Graph-dex* panel. (The signal slides along the scale and disappears when no indication is required.) White signals printed with bold black letters, figures, months, etc., enable titles and scales to be built up on a unit basis. Title tubes clip into the panel slots and carry title strips that are made up in perforated gangs for typing.

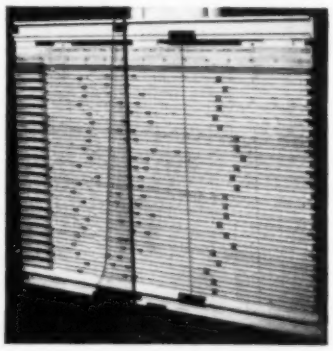
Sched-U-Graph interprets in clear, pictorial form the whole complex set-up of a complete production plan, including full records to the details. Machine loading, continuous operation production and inventory control for line assembly are handled with equal ease. *Sched-U-Graph* is, however, a very flexible charting device and could also be used for sales management, stock control and other similar functions.

Roneo Ltd.
Stands 64 & 76.

FIRST put on the market some two years ago, Roneo visual charts are displayed this year in such a way as to illustrate their adaptability. Typical of the many purposes for which the charts can be used are the following: sales control, production control, progress control, budgetary control, personnel control, and machine and departmental loading.

In order to achieve this high degree of adaptability, the chart has been designed on the unit principle. Basically it consists of a framework which is supplied in two sizes. To this are applied the chart channels, each of which is intended to carry one line of information.

Transparent signals of various types and colours are used in each channel, and these alone will be sufficient for the simpler form of chart. More detailed control requires more signals, and these should be able to pass over each other. To avoid having to remove and replace signals when overtaking occurs, Roneo have devised a further signalling device which consists of carrying lines of very thin, strong cord traversing the



Roneo's adaptable visual chart.

GUIDEX
MERLIN
Stand No. 94

FLAT TOP VISIBLE
THE FILING METHOD OF THE FUTURE
● FITS INTO STANDARD CABINETS
● FLAT TOP GIVES PERFECT VISIBILITY
● ALL POCKETS EXPANDABLE
● EASIEST TO INSTALL
● POCKETS ARE COUPLED
For the name of your nearest Stockist write to the manufacturers—
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GUIDEX WORKS, 99-102 BRADFORD STREET, BIRMINGHAM 12.

FOLDING CARTONS, LITHO and L'PRESS
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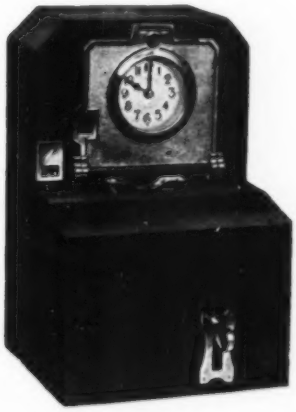
(THREE LINES)

Minutes mean Money

GOOD Time-Keeping is the basis of low costs. Blick Time-control equipment —which is *Independent* of Power Cuts, Load-shedding and Frequency Variation— is modern, reliable and designed to meet the requirements of both large and small firms. We illustrate one model from our extensive range of Time-control equipment.



The BLICK range includes :

- ★ Factory Time Recorders
- ★ Signature Time Recorders
- ★ Job Costers
- ★ Time Stamps
- ★ Master Clock Systems
- ★ Staff Locators
- ★ Watchman's Clocks

Visit our Stand No. 25. BUSINESS EFFICIENCY EXHIBITION, OLYMPIA, 6—16th June.

BLICK TIME RECORDERS LTD., 2 BLICK HOUSE, 188/190 GRAYS INN ROAD, W.C.1
Also at Birmingham, Cardiff, Leeds, Manchester, Newcastle & Nottingham

BLICK TIME CONTROL SYSTEMS

whole length of each channel. On to these are threaded cylindrical signals. As there are normally two cords to each line of charting information, the signals on the upper line can pass those on the lower line, and both sets can pass those signals used directly in the channel.

Where loading is concerned, a slightly different type of channel is used which enables strips of cards to be fed into it directly from the front. These strips may be of varying length, or marked with lines representing time factors.

T.R. Service (Telephone Rentals Ltd.). Stand 57.

ON this stand there are two products which are being shown for the first time. One is an improved version of the *Chronogram* fully automatic time signal control unit. The other is a night watchmen's supervisory and alarm control which is said to be the simplest and most economical way of obtaining security during the day or night.

The *Chronogram* unit enables any programme of signals to be controlled, no matter how complicated it may be. There is full provision for day to day variations, and the operation of different types of signals.

Blick mechanically driven time recorder.

In normal practice the *Chronogram* automatically operates all the sound signals in an installation at pre-determined times. Signals can be given at intervals of as close as one minute and may vary in character from a long continuous signal of approximately 15 seconds duration to a short signal of four seconds duration or even an intermittent signal over a period of about 15 seconds.

A number of separate circuits such as works, offices and canteen, can be controlled by the *Chronogram* and an individual programme is arranged for each department or section of the premises. Thus signals are given only where they are required and other departments are not disturbed.

To suit individual arrangements, various combinations are available of the night watchmen's supervisory and alarm control. The watchman's movements are controlled by this unit and his safety is ensured by a choice of alarm systems.

EQUALLY SUITABLE

for the smaller factory

M16 TIME RECORDER

- Super-fast automatic recording by simple one hand operation.
- Single or two colour printing.
- Automatic time signals.
- Can be controlled from mains or master clock.

We invite enquiries on any problem relating to the indicating, measuring or recording of time electrically.

THE MAGNETA TIME COMPANY LTD.
TRADE MARK

GOBLIN WORKS · LEATHERHEAD · SURREY — ASHTEAD 866 (8 lines)
LONDON OFFICE · 6 GREAT QUEEN STREET · W.C.2 — HOLBORN 9762-9763

a one handed operation

and there's an element of uncertainty about it — but there's no uncertainty about the time record made on an

INTERNATIONAL SUPERELECTRIC TIME RECORDER

This also is a one handed operation

producing an accurate record agreeing with the time-figures shown on the front of Recorder.

Overall size, 16¾" x 14½" x 9¾"

For further details of this modern Attendance Time Recorder—now manufactured in England—send for free descriptive folder 509/2 and ask for details of our Profit Sharing Rental Terms.

INTERNATIONAL TIME RECORDING Co. Ltd.

8 Berkeley Square, Piccadilly, W.1. · MAYfair 2004

HEAD OFFICES: INTERNATIONAL WORKS, BEAVOR LANE, HAMMERSMITH, LONDON, W.6

AND NOW!

FRANKOPOST OFFERS AN OUTSTANDING NEW DESK MODEL!

THE SIMPLEX

SIMPLEX – Eliminates Postage Stamps and the Post Book.

SIMPLEX – Prints all values up to 6½d in ONE impression.

SIMPLEX – gives automatic accountancy by two meter readings.

SIMPLEX – prints YOUR Advertisement or "Return Address."

SIMPLEX – can be justified by a mail of 10-20 letters per day.

The Small Mailer's Postal Franker

Other **"FRANKOPOST"** MODELS

MULTI-VALUE
(Hand or Electrically operated)
Prints up to 29/11½d or lesser maximum for Inland Letters—Parcels and Airmail

PITNEY-BOWES
(Electrically operated)
High Speed Franking and Sealing Machines

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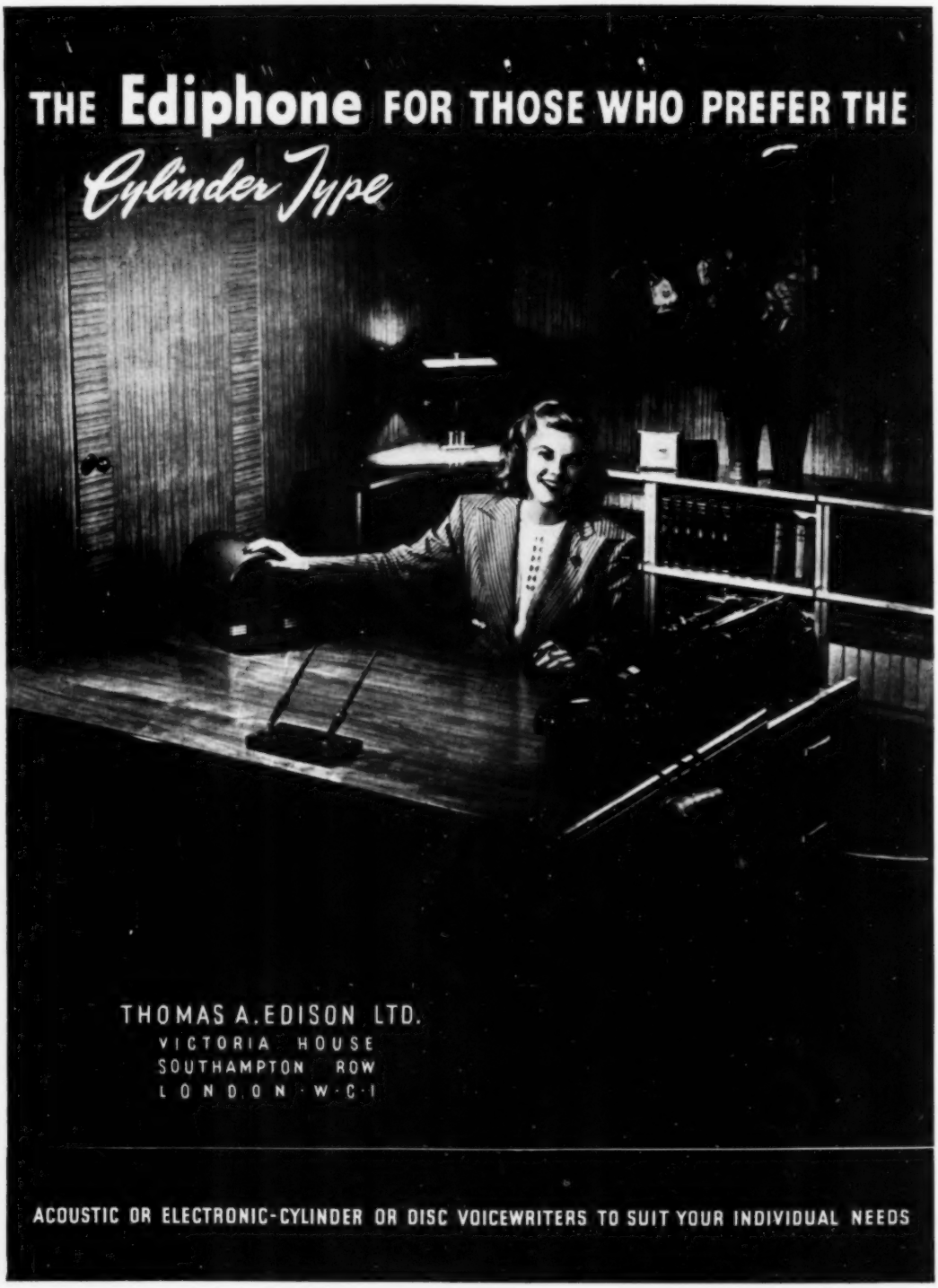
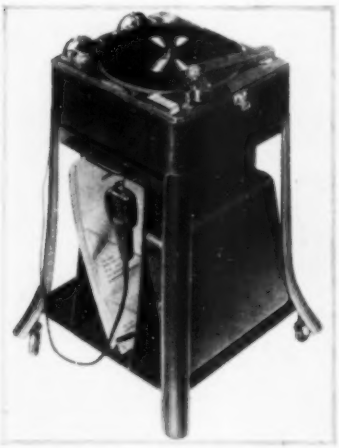

THE Ediphone FOR THOSE WHO PREFER THE
Cylinder Type
THOMAS A. EDISON LTD.
VICTORIA HOUSE
SOUTHAMPTON ROW
LONDON · W·C·1
ACOUSTIC OR ELECTRONIC-CYLINDER OR DISC VOICEWRITERS TO SUIT YOUR INDIVIDUAL NEEDS

Dictating and Recording Machines

Dictaphone Co. Ltd. Stand 77.

THIS company are showing *Time-Master* dictating and transcribing machines and *Time-Master* dictating and telephone recording machines.

The dictating and transcribing machines employ plastic memo belts which provide for 15 minutes of dictation, and can be transcribed, filed, stored or mailed in an ordinary business envelope. Electronic recording is made either through a desk or a tiny hand microphone. Both sides of a telephone conversation can be recorded simply by throwing a switch.



The Recordon dictating machine.

Only four-and-a-half inches high, the machine is designed primarily for the office but is so portable that it can be taken anywhere. The transcribing machine clearly reproduces the recording by means of a lightweight headset. Volume, tone and speed are easily controlled. In large offices the work of many dictators flows efficiently through a centralized transcribing department.

Memo-belt and magic ear bring echo-clear dictation to the transcriber, who can backspace instantly and automatically and repeat as much or as little as she wishes. A positive correction system makes it simple for her to correct mistakes and determine the length of letters. For these and other reasons the secretary can do more work in less time.

The Dictaphone Time-Master dictating machine which uses a plastic memo belt.

London Office Machines Ltd. Stand 102.

PORTABILITY and simplicity of operation are two prominent features of the *Tape-Riter* magnetic tape recording machine. Each reel of tape takes up to 30 minutes continuous dictation and is accommodated in a removable cartridge. Another cartridge can be fitted in a few seconds without making any adjustments. A new feature is a warning buzzer which tells when the end of the tape is being reached and the cartridge should be changed. The signal can also be set for any time before the end of the tape.

An indicator control on top of the cartridge works in conjunction with a card which shows the position and length of letters and recordings. This makes it simple to locate any specific letter or piece of dictation. There are spaces on the card for writing in brief details of what has been recorded—a visual index of each reel of tape.

The Soundmirror conference recorder.

BRITISH UNIVERSAL E.M.E RETALKER

The NEW office recording machine . . .

EASY TO USE. The machine has been designed to give simplicity in operation, and the special features of this new **MAGNETIC TAPE RECORDER** enable even an inexperienced typist to deal adequately with correspondence.

SMALL AND COMPACT. It is small enough to be accommodated with ease on an office desk as it occupies a space of only 13in. by 9½in.

TYPIST'S EARPHONE. Recordings can be replayed through the loud speaker incorporated in the machine, or through a special earphone attachment that is provided.

TELEPHONE PICK-UP. By means of an additional attachment **TELEPHONE CONVERSATIONS** can be recorded in their entirety and replayed or transcribed at will.

SIMPLE SPEED CONTROL and an indicator that enables any position on the recording to be pin-pointed.

Patent Pending BRITISH MADE

★ **THIS LOW PRICED OFFICE RECORDER WITH ITS MANY APPLICATIONS WILL RAPIDLY PAY FOR ITSELF IN SAVINGS IN LABOUR COSTS ALONE.**

BRITISH UNIVERSAL E.M.E LIMITED

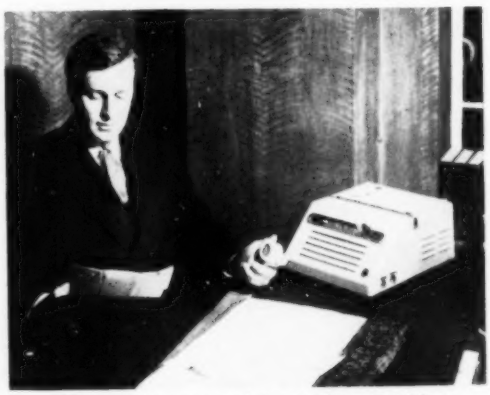
36 VICTORIA ST., LONDON S.W.1. *Tel: ABBEY 5457*

The control system is easy to operate. On the left hand side of the machine is a combined on/off and volume control wheel, whilst on the right hand side are the remainder of the controls, which are operated in much the same way as a motor car gear lever. By using the lever and "changing gear" the machine records, plays back, speeds forward to any point at 15 times the regular pace, and rewinds equally quickly.

The continuous repetition of advertising messages is made possible by a new continuous tape advertising machine, which is specially designed for the purpose. Instead of stopping at the end of a cartridge, the tape continues to circulate until the machine is switched off.

Office Machinery Ltd.
Stand 8.

THE *Rex Recorder* (Model TN.2) which is being shown for the first time by Office Machinery, works electro-magnetically and can be used for the dual purpose of dictation and transcription. Simply by speaking into the microphone, the voice is recorded on a plastic disc through magnetisation. The microphone, with spring switch for start-stop



The easily operated Tape-Riter machine.

and a button for continuous dictation, is shaped to fit conveniently into the hand. It excludes background noises and can therefore be used in rooms where several other people are working. Clear reproduction is obtained through the featherweight headphones or alternatively through the microphone.

The unbreakable disc takes 12 minutes dictation and after transcription the recording can be erased quite easily and the disc used over and over again an unlimited number of times. The disc can also be filed for any length of time or mailed to any destination. Within the office it goes in a special folder, together with the letters under reply, and is routed for transcription. The disc can be set so that transcription begins at any pre-determined point

Tape-Riter

THE DICTATING AND RECORDING MACHINE DESIGNED BY BUSINESS MEN FOR BUSINESS MEN

High Quality reproduction on Magnetic tape held in Cartridge.

Each tape gives 30 minutes recording. No handling necessary. Cartridges can be changed in 2 seconds.

Automatic erasure facilitates correction and extends life of tape indefinitely.

Simple to operate with instantaneous control.

Records and transcribes dictation, conferences, interviews and telephone conversations.

You are invited to visit our Stand No. 102 Business Efficiency Exhibition June 6—16

We will gladly give you a demonstration in our showrooms or in your office. Write or telephone for informative leaflet.

CURTA

THE LATEST IN CALCULATOR DESIGN

A complete calculating machine in highly compact form for all types of multiplication, division, percentages, square roots etc., which will meet the needs of:

ACCOUNTANTS, ARMED FORCES, BANKERS, EXECUTIVES, ENGINEERS, DRAUGHTSMEN, SURVEYORS, SCIENTISTS, STOCKBROKERS

Pocket Size—Weight 8 ozs.

Precision—like a Chronometer.

Robust—all metal: Finest rust-proof materials give lifetime of wear.

Silent—completely silent in operation.

Accurate—tens transmission throughout, automatic safety stop prevents errors.

Universal—Adds, subtracts, multiplies, divides, capacity: 8 x 6 x 11.

TELEPHONE: SLOANE 1061 & 1626

LONDON OFFICE MACHINES LTD.

TELEGRAMS: LONOMAC SOWEST London

128, TERMINAL HOUSE, GROSVENOR GARDENS, LONDON, S.W.1.

DICTATING & RECORDING MACHINES

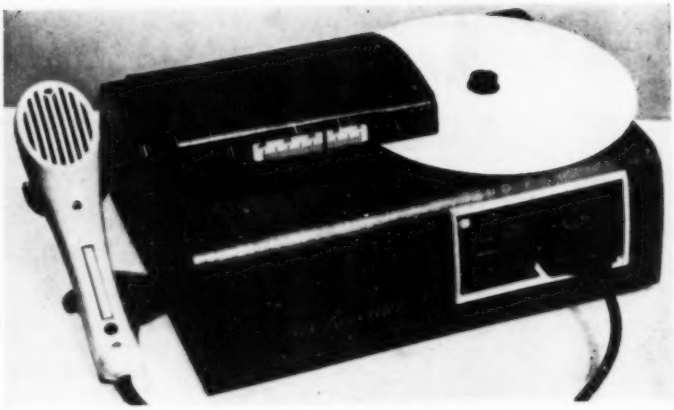
on the recording. A one-foot-operated control unit is used for start-stop-repeat.

Royal Typewriters. Stand 82.

THIS company is showing the *Dimafon*, a new dictating and reproducing machine which is making its first appearance in London. Made by a leading firm in electronics, the *Dimafon* can be used for dictating and reproducing either by headphones or loudspeaker. Unbreakable records can be used many times over. Simple in operation, the machine is claimed to save time for both the executive and the operator.

Thermionic Products Ltd. Stand 5.

THE well-known *Recordon* magnetic dictating units and *Soundmirror* conference recorders are featured on this stand. Weighing less than 15 lb., the *Recordon* makes recordings on magnetically coated paper discs which can be transcribed and erased and used over and over again. Other important features include start and stop recording by press button control and automatic erasure of mistakes by the same means. The completed record can be filed, or removed for transcription or playback. Alternatively, the record can be folded and dispatched in an ordinary envelope.



Exhibited for the first time is the Rex-Recorder dictating machine.

The range of equipment for use with *Recordon* machines includes correspondence folders, and index pads. There is also the *Codit* scroll for dictation of confidential messages.

The *Soundmirror* machine records continuously for up to half an hour. It is particularly useful for board meetings, sales talks, etc. The recording medium is tape.

INCORPORATING EVERY *FUTURE* REQUIREMENT

THE DICTOREL

THE DICTOREL

THE LAST WORD IN RELIABLE DICTATING EQUIPMENT

SUPERSEDING DISCS, WIRE AND TAPE

A product of the world famous A.C.E.C. Company

The DICTOREL is an entirely new concept in magnetic dictating machinery. The recording medium is simply a sheet of paper — called a Dictogram. You can erase this at will using the same sheet for thousands of recordings: post it or file it for permanent records. You can also record your telephone conversations — without attachment to the instrument.

The simplicity of feeding and operation will astound you, as the quality of reproduction and the stream-lined design will delight you.

Write, call or phone for a demonstration:

THE TREVOR-JOHNSTONE COMPANY LTD.

169-174, SLOANE STREET, KNIGHTSBRIDGE, LONDON, S.W.1. (SLOane 6198/9)

MODERN FACTORY
...out-of-date OFFICE?

★ That's the anomaly of many present day businesses. Once it was the reverse. Now the factory has outstripped the office in the adoption of modern methods. Look to your *office* efficiency. Electronic science, which has revolutionised so many factory processes, now slashes office wastage.

The Emidicta is the Electronic secretary which records on the spot, letters, notes, reports, thoughts, messages—what you will—all for easy transcription by the typist at the most convenient time. Nothing can resist the eventual adoption of the Emidicta by every progressive office management.

Use the coupon to obtain a free demonstration and descriptive literature.

The Emidicta

This Electronic Dictation Machine out-dates all past achievements in the field of recorded dictation ... produced by E.M.I., the great electronic engineering organisation which includes "His Master's Voice", Marconiphone and Columbia—past-masters in the art of recording and sound reproduction.

Transcription errors are eliminated because dictation is recorded word for word.

E.M.2

THIS COUPON CAN SHOW THE WAY TO GREAT SAVING OF TIME AND MONEY IN YOUR OFFICE WORK

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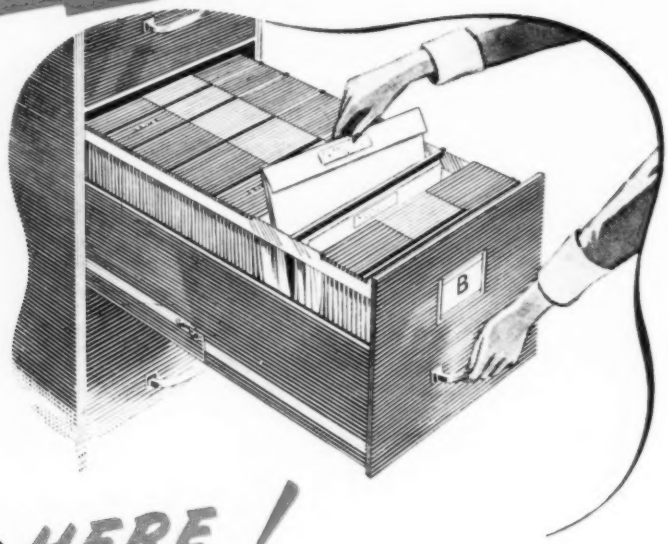
Remington Rand
STAND No. 45-55
BUSINESS EFFICIENCY EXHIBITION



IT IS HERE!

when wanted urgently

Business will not wait whilst files are searched for important documents. The need must be fulfilled immediately. And that's not all! Files contain facts . . . data upon which a business can expand, upon which vital decisions can be taken immediately. Remington Rand systems not only produce documents when wanted, swiftly and surely, but provide significant facts as well. So fundamental, so active, does filing become with Remington Rand that what was once a necessary evil, becomes the very pulse of an office. For this reason industries, banks, offices and professional men are turning to Remington Rand for efficient filing and by so doing are reaping rich rewards, through their foresight.

Send for this book!

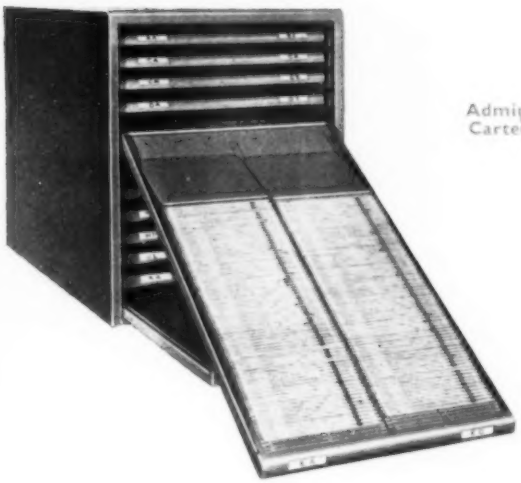
Entitled "FILING FOR FINDING," our new book tells how and why the Remington Rand interpretation of modern filing efficiency is vital for your business. It is free on request.

Remington Rand

REMINGTON RAND LTD.
Systems Division (Dept. FA.14)
Commonwealth House, 1-19 New Oxford Street, W.C.1
Chancery 8888

PROGRESS THROUGH EFFICIENCY

Filing Systems and Equipment



Admipdex cabinet by Carter-Parratt Ltd.

Art Metal Construction Co. Stand 42.

SHOWN for the first time in England, an interesting rotary filing system called the *Rollindex* will accommodate up to 72,000 cards—all placed within easy reach of one seated operator. The system will take existing records cards without punching or other modifications, and they are selected by a spinning of the wheel.

The standard *Rollindex* unit has a capacity of 5,000 to 24,000 cards and may be built into a system with up to five wheels. If necessary, a battery of units may be installed to provide any capacity.

Adaptable to any standard filing cabinet and any filing method (numerical, alphabetical, etc.), the visible suspended filing equipment displayed by Art Metal is simple to use. Each folder is provided with its own permanent place in one of a series of pockets which are linked by their top edges and suspended in such a manner that they are always vertical.

A highly efficient planfile, visible filing system, card index system and visible leaf "strip" index are also manufactured by this company.

Bulmer's (Calculators) Ltd. Stand 44.

OF special interest on this stand is *Bankdex* visible index equipment, including desk, wall and rotary stands or units, and visible records book units. The *Bankdex* panels are angle poised, i.e. when opened for reference they stay in the right position. The panels are also designed to hold index units on both sides, and are available in a very wide range of capacities.

Index units are supplied mounted on a flexible kraft base. These units can be typed on any standard typewriter. After typing or writing, they are easily peeled off the base sheet and assembled in the required order. They can also be ruled and printed for special purposes, such as progress records, diaries, etc.

Another important exhibit by Bulmer's is the *CVS* visible suspended filing equipment. In this, each folder is provided with its own permanent place in one of a series of pockets which are linked by their top edges and suspended so that they are always vertical.

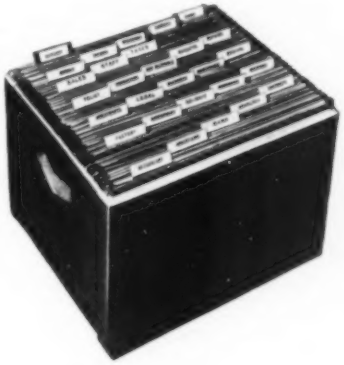
The equipment is permanent, and yet it can be installed in any standard vertical filing cabinet, quarto or foolscap.

Carter-Parratt Ltd. Stand 99.

ATTRACTIVELY finished in a dove-grey colour, models of the *E type* "flat" visible card index cabinet are made so that all trays can be reached from a sitting position. Both the 6in. and 8in. width sizes are available in single or double row and the 5in. size can be obtained in a treble row model. For cards of 10in. width or over, only single row cabinets are supplied.

The *Vistem* vertical visible card index equipment is available in four main types of container, including an attractive desk. The double pedestal desk model will house up to 20,000 4½in. by 4in. cards. Trays, trolleys or cabinets can also be used with this flexible system.

Constructed so that new strips can be added quickly and easily, the strip index equipment is now available in book form, capable of holding over 700 strips. Wall



The Shannon desk top unit.

FILING SYSTEMS AND EQUIPMENT

mounting, revolving or non-revolving stand models are also obtainable.

The *Sepial Sorter* is a simple sorting device which readily allows additional guides to be added where desired.

C. W. Cave & Co. Ltd. Stand 51.

THAT a model of the *Cardwheel* rotary card index system is available for many types of application is shown by the fact that over 60 models are produced, including a portable unit which can be mounted on a tubular trolley so that it stands at desk height.

Cards in this system are securely held but can be removed or replaced instantly in any position without disturbing the filing sequence. Entries can be made on both sides of the card without removal from the wheel.

Cave's Cardwheel cabinet unit.

Other filing products are the *Cavedex* range of visible equipment including the pocket type visible index, suspended card books and single line strip index equipment, and the *Joca* bound correspondence file.

Expandex Visible Filing Co. Ltd. Stand 91.

ALL kinds of filing cabinets, desk drawers and other containers can be used for *Expandex* suspended visible flat top equipment. *Expandex* is a unique patented design having an exclusive feature of expanding and contracting end holders to the bridge member. This ensures free movement at all times, as the bridge member extends itself to any angle required.

Standard sizes are jumbo, foolscap, continental and quarto, and the system is complete with internal folders of all types with signalling devices. The system is built up in a concertina arrangement which ensures full control and can be applied in alphabetical, numerical, subject or geographical arrangement.

The company also produce special containers for housing their equipment when used on desks.

Kalamazoo Ltd. Stand 18.

AN entirely new product, the Kalamazoo signals on display here are designed for accounting and recording purposes. They are available in four vivid and distinguishable colours, are simply and effectively applied and can be readily removed when necessary.

The compact strip index system also shown is recommended for quick reference work and can easily be kept up to date.

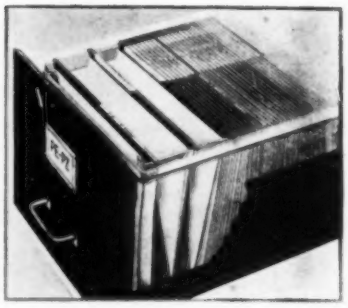
London Letter File Co. Ltd. Stand 28.

VERTICAL filing with alphabets of 25 divisions to 7,000 and all kinds of index box files are shown on this stand. Particularly interesting are the *Tenet* permanent binders for important financial papers which must have a definite lock. Once bound, papers cannot be added to these books. For less vital documents there are the *Tenet Lockstitch* and *Tenet Two Post* binders.

Milners Safe Co. Ltd. Stand 86.

EXECUTIVES who are checking their filing equipment will be interested in two products on this stand—the *New Mersey* filing cabinet and the *Mil-Span* suspended pocket filing system.

The *Mil-Span* system is said to be the simplest and most efficient filing system of its kind on the



Remington-Rand Speedac suspended filing equipment.

market. Each folder, or group of folders, is housed in its own pocket, which is suspended from a steel chassis. The pockets are interlocked so that it is impossible to lose a paper between the files, but additional pockets can be inserted at any point without disurbing the others.

The filing cabinets incorporate convex-edge design and combine strength and rigidity with an attractive appearance.

Remington Rand Ltd. Stands 45 & 55.

PART of the "complete service to business and industry" provided by Remington Rand is the *Speedac* visible suspension filing system, a development which practically eliminates the risk of misfiling. All subject titles are visible at a glance, so that letters can be filed and found easily and quickly. The *Speedac* chassis fits into any file drawer.

Another important exhibit is the *Kardex* group of cabinets. Production, sales, stock, personnel and many other aspects of management can be controlled by this system.

Remaining exhibits include two types of *Lincdex* quick reference indexing equipment—the rotary and the desk stand; and *Variadex*.

Roneo Ltd. Stands 64 & 76.

CHIEF filing exhibit on this stand is the Roneo *Visible*-80 system, which embraces suspended pockets adaptable to any filing cabinet and desk drawer. The number of ways in which the system can be applied is practically

Management, too, needs modern Tools

You can't "tape" inefficiency in the office in the way you can in the factory. That's why old-fashioned methods of keeping records linger on, expensively.

The raw materials of office work are facts and figures. Too often they are buried away in duplicate books, letter and order files, etc., etc., when they should be right on the top surface, ready for instant reference, correlation, decision.

A SELDEX System is a machine-tool for dealing with facts. For whatever business or department the system is designed, all relevant facts spring to the eye at the flip of a finger.

SELDEX Systems are at this moment doing a man's job in many outstandingly efficient firms in this country—but don't assume that SELDEX is exclusively a big firm's tool. Efficiency is just as profitable in a small office as it is in a big one. Use the coupon to learn the facts about SELDEX.

SELDEX

SELDEX FOCUSES YOUR FACTS

VISIBLE RECORDING SYSTEMS

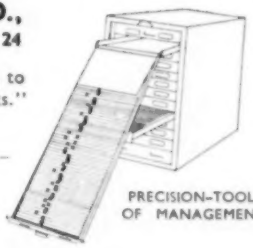
SELDEX (DEPT. B.) **CONSTRUCTORS LTD.,**
TYBURN ROAD · ERDINGTON · BIRMINGHAM, 24

Please send me details of Seldex Systems particularly relating to .....Departments and a free copy of "Seldex, how it works."

Name.....

Firm.....

Address.....



PRECISION-TOOL OF MANAGEMENT

VISIBLE RECORDING SYSTEMS

S19

unlimited, and specialists are on hand to advise the best way of meeting particular problems.

Roncodex visible recording systems and equipment have been considerably improved since their introduction a couple of years ago. The display of systems based on holder and pocket methods of card suspension shows the adaptability of *Roncodex* principles to all types of hand-posted records.

Another section of the display is devoted to the new personal record cases, which are leather bound visible record books fitted with zip fastenings and locks. These are intended for the confidential records of the executive, and are offered in various sizes and leather finishes.

Various examples can be seen of the different types of strips available for visible strip indexing. In particular there is the *Stripdex* brand of wooden strips faced with index board for straight-forward listing purposes; and the transparent holder equipment, which is specially adaptable for control by means of moving signals.

The Shannon Ltd. Stand 20.

IN the past few years, visible records have become widely accepted in business organizations. The *Shannovue* visible card records are unusual in that they can be used for entering on both sides, and are suspended metal-on-metal from hangers. The removal or insertion of a record is thus a very simple operation which can be handled by a junior member of the staff.

The *Shannostrip* one-line index does not provide for a quantity of detailed entries, as does the *Shannovue*. Its main value is that thousands upon thousands of visible strips can be housed for quick reference within the range of the eye. Thus *Shannostrip* is ideal for telephone numbers, advertising and sales enquiries, prices, code numbers, credit control and similar information.

As a general filing system, *Shannograph* full vision flat top files are practically fool proof, for colour charting indicates when a file has been put back in the wrong place. *Shannograph* is a suspended system, box-like in shape, and with closed tops. It carries coloured signals and record cards.

Shannoblic is a tabbed version of suspended filing. The files have a large capacity and are widely used as main general systems. Desk top units can be used for controlling active correspondence, etc.

The Stolzenberg Patent File Co. Ltd. Stand 88.

ONE advantage of the suspension filing equipment on display is that it can be easily installed in existing filing cabinets without changing the equipment. Chassis and pockets are simply dropped into the drawer.

The system is composed of a series of pockets linked by their top edges and suspended from a chassis. The pockets are titled on top and are permanently in posi-

Continued on page 170

FILING
PROBLEMS

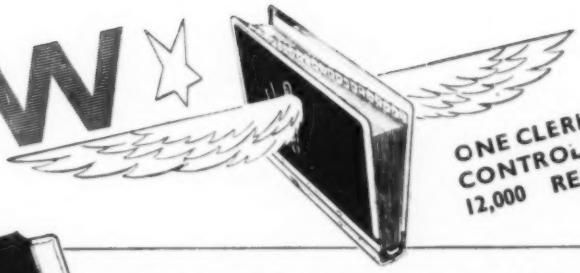
in many cases are the result of using the wrong equipment within the framework of a basically good filing system. The solution often lies in the adoption of a more suitable style of file.

A very wide range of files and filing efficiency aids is exhibited on the Stolzenberg Stand, and you are warmly invited to bring your own particular problem to

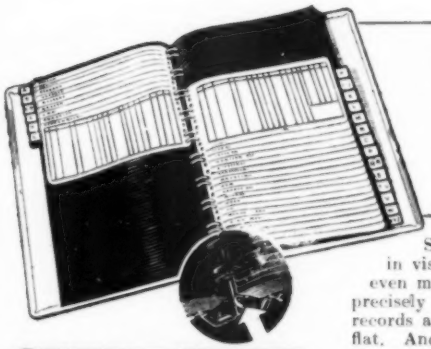
STAND 88, BUSINESS EFFICIENCY EXHIBITION

THE STOLZENBERG PATENT FILE CO. LTD.,
14 QUEEN VICTORIA STREET, LONDON, E.C.4. CITY 1078

NEW



ONE CLERK CAN CONTROL 500 to 12,000 RECORDS



The FASTEST, LIGHTEST and MOST COMPACT Loose Sheet System...

Speed of reference. . . . Speed of entry . . . these are the vital factors in visible records. The complexity of modern business demands both. But, even more, the rising cost of clerical labour necessitates both. . . . Which is precisely why Shannoleaf has been designed. It is a *streamlined* system; the records are visible, the binders are light and slim, the writing surface consistently flat. And Shannoleaf can be applied to any purpose demanding *fast* recording. Many records are standard. Others can be readily designed. And with each system goes the preliminary research that ensures you have *just* the ruling to give you the *maximum* service—in facts—in speed. Just put the word "Shannoleaf" on your letterheading and full details will be sent you by return of post.

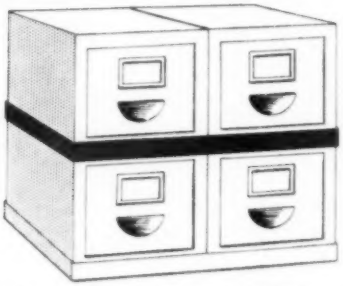
Shannon Systems

FIRST IN FILING

The Shannon Limited, 94 Shannon Corner, New Malden, Surrey.

LOCKED WITH LINKS

- NO TOOLS
- NO SCREWS
- NO BOLTS



The **Bisley Index** system introduces **Self-Contained Individual Index Cabinets.**

With the incorporation of the "LIMPET LINK" a complete index system may be built as required in **any multiple** of cabinets.

Instantly interlocking ***and as speedily rearranged.***

BUILD your index system with your BUSINESS.

"If your usual supplier does not stock BISLEY Equipment, write for List, and name and address of nearest distributor."

BISLEY INDEX CABINETS

F. C. BROWN, BISLEY, SURREY,

Telephone: Brookwood 2373/3131.

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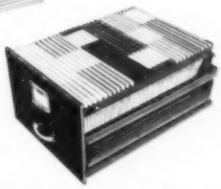
a bit before our time

They had shrewdness and energy in plenty, these ancestors of ours —but how handicapped they were by their primitive office equipment.

TO-DAY



Expandex Suspended Filing Systems keep papers orderly and handy — "easy to file, easy to find" — and adds immensely to office efficiency.

EXPANDEX VISIBLE FILING CO. LTD.

94 BAKER STREET, LONDON, W.1.

Telephone: WELbeck 3966

Tradition

The LONDON

THE TIME HAS COME . .

to re-introduce our exclusive range of furniture for Boardroom and Private office.

Backed by a reputation extending over the past 30 years, quality, style and workmanship once more constitute the keynote of the equipment now in production.

The 'London', as illustrated, is a fine Desk of Oak or Mahogany, made in three-piece style with top lined in hide and having ample drawer space as shown. Constructed on modern lines with all the TRADITION of good craftmanship. The 'London' is but one of an extensive range.

We also have a wide range of standard furniture suitable for the general office.

Our first post-war CATALOGUE sent on request.

CAVE

Telephone:
CENtral 3778-9.

C. W. CAVE & CO. LTD.
59 HOLBORN VIADUCT, E.C.1.

Furniture and Seating

One of Roneo's U-Series desks.

Art Metal Construction Co. Stand 42.

A MAXIMUM amount of foot-room is allowed with Art Metal's grey and chromium finished *Airline* executive desk. With rounded edges and corners, this model has an *Artolin* covered top which is glare-free and an ideal writing surface.

Single and double pedestal model typewriter desks also made by this company measure 45in. by 34in. and 60in. by 34in., respectively. The drop-head typewriter attachment will take all standard machines, and the desk is fitted with box drawers and sliding reference shelves.

Single and double pedestal "commercial" desks are made with box, knee-space and vertical file drawers, including the reference shelf incorporated in other desk models. A useful steel office table is also manufactured.

C. W. Cave & Co. Ltd. Stand 51.

REPRESENTATIVE items from a range of exclusive wooden office furniture made by Cave's are on display at this stand.

Dare-Inglis Products Ltd. Stand 30.

CHAIRS for the office, factory, canteen and hall exhibited on this stand include latest models with new design features. One of these, the *Model LC.121* executive armchair, is an automatic positional seating unit with a pivoting back-rest, self-adjusting to correct height.

The spring loaded floating back support on the latest model typist's chair makes use of an adjustable compression spring. Like the other posture models, this chair incorporates both the new locking control and "floating" base nut assembly.

A new type of stacking armchair with tip-up seat is also featured.

J. Glover & Sons Ltd. Stand 23.

DESIGNED to cut storage space to a minimum while providing versatile and mobile shelf space, the *Stormor* mobile storage equipment shown is available in a multiplicity of shapes and sizes. Bin-front, pigeon-hole cupboard and open-type shelving in their various widths and heights can be adapted to both office and industrial use.

James Howden & Co. Ltd. Stand 68.

THE constructional arrangements of certain units on display here makes possible many design variations to suit individual applications and tastes. This is particularly true of the storage bin and shelving units which can be adapted to many different uses.

Large-drawer steel filing cabinets, fifteen-drawer and ten-drawer stationery cabinets, steel sectional bookcases, cupboards, shelving units, etc., are being displayed together with several attractive desks.

Leabank Chairs Ltd. Stand 87.

WITH a choice of upholstery to cover the foam rubber arms, back and seat, the *Type KE* executive's chair is a carefully designed seating unit. Adjustable from heights of 18in. to 23in., the

Leabank Chairs' KE executive model.

FURNITURE AND SEATING

Principal's desk by Milners Safe Co. Ltd.

frame is finished in grey, green or brown metallic enamel. Rexine material in brown or green, wool felt in green or maroon, and Bedford cord in green or fawn, are the ranges of upholstery available.

The *Type KP* on display is a senior clerk's chair with a large deep cushioned seat and padded back. Height and backrest are fully adjustable and a choice of frame colour and upholstery material is also given.

Among the selection of office chairs shown is the *Type KJ1* secretarial model. Four ranges of seat height adjustment are obtainable, with suitable upholstery and frame finish.

Milners Safe Co. Ltd. Stand 86.

EVERY part of the distinctive principal's desk shown on Milners' stand has been adapted to some useful purpose. Glass covered pull-out shelves, moveable-partitioned box drawers, centre drawer pin tray, and separate lockable cupboards in each pedestal are some of the features.

Also fitted with smooth running, roller bearing progressive extension slides, drawers on the manager's desk are supplied for a number of specific purposes. This desk is lino covered and fitted with a footrail between pedestals.

The *Minor* cupboards, the *Milswivel* chair, typist's desk and office wardrobes make up the remaining products displayed.

Owen & Randall (Stor Cabinets) Ltd. Stand 26.

FOR the safe and systematic filing of small components, including cash, papers, instruments, etc., the all-steel multi-drawer cabinets on display are available with drawer heights from 2in. to 10½in. Each stack of drawers is secured by a special Yale cylinder lock.

Standard finish for this equipment is dark olive green or black.

Roneo Ltd. Stands 64 & 76.

SOLUTION to the problem of dividing office space without interfering with natural lighting or air conditioning can be found in three types of steel office partitioning made by Roneo Ltd. In addition to the normal floor to ceiling units, glazed and low barrier divisioning can be seen.

Leaving a margin of colour and design choice to the user, the *U Series* desking and equipment on display is of flexible, unit construction. Cupboards, bookcases and handy telephone side tables with space for reference books and directories are also shown.

Rubery, Owen & Co. Ltd. Stand 33.

SPECIALLY streamlined with a "D" shaped solid hardwood top, the conference desk on this stand will accommodate at least six persons with ample leg room. Oak, mahogany or *Formica* tops are supplied with a natural polished finish.

Drawers of this desk are fitted for all purposes. A box drawer has a transverse card index compartment; a foolscap drawer will house an adjustable compressor or visible pocket filing system, and all other drawers are made with two dividers.

This model is adjustable in height from 29½in. to 31in. and the body is finished in duo-tone, eggshell gloss enamel or a plain colour, as desired.

Other furniture of interest at this stand includes: a single pedestal administrative desk with lino top measuring 48in. by 32in. by 30½in. high; a double pedestal typist's desk with adjustable height and a deep sound-deadening lino top; administrative grade filing cabinet with an automatic locking device which controls all drawers;

An example from the Howden range.

BUSINESS EFFICIENCY EXHIBITION, OLYMPIA, STAND NO. 33

Time and space saving in business is the basis of real efficiency, and every piece of Rubery Owen Office Furniture and Commercial and Industrial Equipment is functionally designed for this purpose. For every hour of the clock there is a representative item of R.O. Equipment, each piece combining beauty of appearance with the maximum of efficiency in use. Except for export requirements there is likely to be a material shortage which will interrupt the free flow to the home market of this "furniture of the future"

RUBERY OWEN

EQUIPMENT FOR OFFICE AND FACTORY

Office Equipment Division: Rubery, Owen & Co. Ltd, Darlaston, South Staffs.

Industrial Storage Equipment Division: Rubery, Owen & Co. Ltd., Whitegate, Wrexham, N. Wales.

FURNITURE AND SEATING

and a comprehensive range of other office equipment finished in attractive colours.

Sankey-Sheldon Ltd. Stand 43.

NEW equipment for the secretary/typist is to be seen on this stand. The new typist table and typewriter desk—with special typewriter pedestal—can be found among a comprehensive range of office furniture.

Standard *Masterform* units are shown assembled into continuous top desks. The design of these units allows variety in desk construction to suit individual requirements. Adjustable shelving and partitioning are two other products on view.

The Shannon Ltd. Stand 20.

OFFICE furniture to be found among the equipment on display at this stand includes typists' wooden desks and filing cabinets.

Tan-Sad Chair Co. (1931) Ltd. Stand 62.

SEAT and back design of the *Model V/16* executive armchair is such that it encourages correct working posture while providing for a comfortable, semi-reclining relaxed position. The spring-filled, non-tipping seat is adjustable laterally and vertically and—like the back and arm rests—is upholstered in fine quality material.

Back rest of the popular *Model V/10* sturdy typist's chair can be adjusted from a sitting position. Cushioned and streamlined, the backrest is fitted with a name plate to allow instant identification should the chair be misplaced. The unit is available in four minimum seat heights and is upholstered in good quality covering, with an olive green enamel-finished frame.

The wide range of other office and factory seating equipment on display includes the *Model 2551* swing bracket factory posture seat —on show for the first time.

Rubery Owen single pedestal administrative desk.

"SECRYTYPE" DROP-ACTION TYPISTS' DESKS

Now Made in 15 Different Models—Single and Double Pedestals.

ANOTHER NEW MODEL 1950 D.

The illustrations show this desk open and closed. Size of desk, 44in. long × 28in. wide × 31½in. high, with roller shutter front.

Two desks in one, at a reasonable price.

IMMEDIATE DELIVERY.

Ask for Full Particulars and Prices.

"Secrytype" Desks have been approved by the Council of Industrial Design and are being exhibited by the Festival of Britain Authorities.

Patentees and Sole Manufacturers:

OSDA LIMITED

108 FULHAM PALACE ROAD, LONDON, W.6.

When choosing office chairs-

-there is none better than **LEABANK WORKCHAIRS**

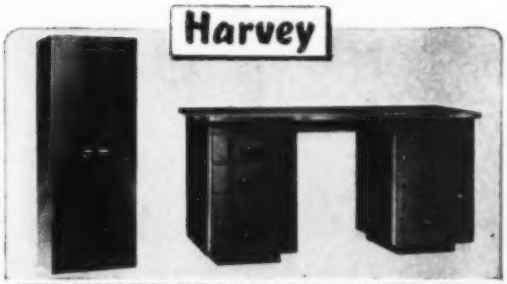
CHAIRS FOR TYPISTS · SECRETARIES TELEPHONISTS · DRAUGHTSMEN AND FACTORY WORKERS

Write for literature detailing complete ranges and prices of Factory and Office Chairs.

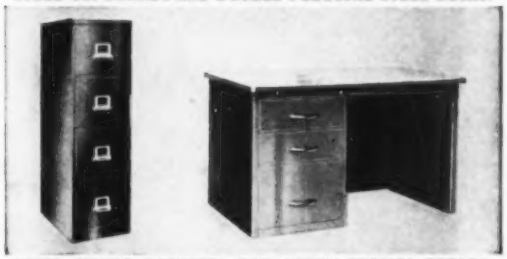
LEABANK CHAIRS LTD

18 Clifton House, Euston Rd., London, N.W.1

Harvey



STEEL CUPBOARDS AND DOUBLE PEDESTAL STEEL DESKS.



STEEL FILING CABINETS AND STEEL TYPISTS TABLES.

STEEL CUPBOARDS WITH SLIDING DOORS.

STEEL CUPBOARDS WITH SHELVES OR PIGEON HOLES.

All Harvey Steel Office Furniture and Equipment is of modern design, sound construction, and of the highest quality. Finished in Olive Green stoved enamel it is perpetually durable, fire-resisting, and proof against damp and vermin. Prices are competitive. Send for Catalogue No. BU800

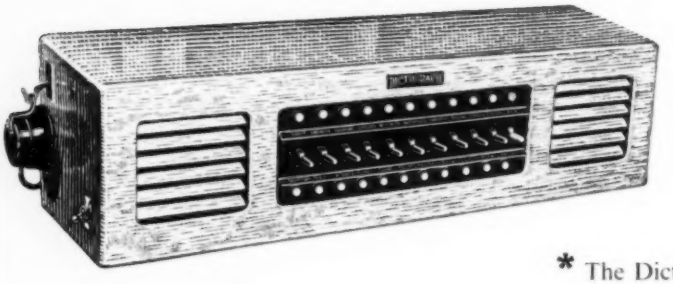
Harvey

G. A. Harvey & Co. (London) Ltd
Woolwich Rd. London, S.E.7

IF YOU'RE TOO BUSY

TO CONSIDER THE ADVANTAGES

OF A DICTOGRAPH TELEPHONE SYSTEM * YOU OBVIOUSLY NEED



A MASTER STATION

ON YOUR DESK

* The Dictograph Master Station gives you instantaneous contact with all your staff; conferences without a man leaving his desk; indicates who is calling; gives priority without disconnecting or interrupting anyone; freedom of movement while you speak—nothing to hold or press; and many more time-saving features unique to Dictograph. Why not phone or send a postcard for fuller particulars—a system may be purchased or rented at a cost lower than you imagine. If you're in London during June, call at Dictograph's stand at the Business Efficiency Exhibition and see some of the many ways in which we can help you to get more from less.

STAND NO 12 BUSINESS EFFICIENCY EXHIBITION
OLYMPIA JUNE 6TH TO 16TH

DICTOGRAPH TELEPHONES LIMITED

ORIGINATORS OF LOUDSPEAKING TELEPHONES

CHIEF SALES OFFICE: 200 ABBEY HOUSE, VICTORIA STREET, SW1 ABBEY 5572

BRANCHES IN PRINCIPAL CITIES THROUGHOUT THE COUNTRY

DICTOGRAPH

INTERNAL TELEPHONES · STAFF LOCATION
MUSIC FOR INDUSTRY
MASTER CLOCK CONTROLLED TIME SYSTEMS

T4A

Intercommunication Equipment

Communication Systems Ltd. Stand 101.

THIS company are showing press button intercom. telephone systems, *Soundmaster* intercom. telephone systems, sound amplification and distribution equipment, and private automatic exchange equipment.

The press button systems provide 5-15 lines, with or without loudspeaker master stations. Master station calls have privacy and priority; and conference facilities are available if required With the *Soundmaster*, the master station instruments are equipped with mains operated amplifiers. There is no speak-listen key to operate, and the user can move about his office while conversing with a substation. Two or more master stations can operate on the same system and master station calls have priority and are secret. Substation units are of the press button type.

The sound amplification and distribution equipment consists of a number of standard units built up in rack and cabinet form and is sufficiently flexible to cover the requirements of music, announcements, etc., for factories, theatres, hotels and schools. Music can be obtained from a radio receiver, a self-change three-speed gramophone unit, or directly from stage or studio via a ribbon type microphone.

The private automatic exchange equipment comes in units of 10, 25, 50, 100 lines and upwards. Mains operated, it gives a 24-hour service equivalent in all respects to the public system and many special facilities are available.

Dictograph Telephones Ltd. Stands 12 & 37.

THE staff location system manufactured by Dictograph Telephones can be classed as one of the most versatile on the market. Serving any number of sub-stations from one to more than 200, the system requires neither switchboard nor operator. The result is that there is no congestion of calls, and any existing operator is freed for normal duties.

Important features include the following: conversational right of way for all principals; loud-speaking for executives, with privacy when desired; executives' dictation and conversation can be carried on whilst moving about the room; executives' conversations are not cut off or interrupted; three or more associates can join in conference; visual indication of the source of calls; and every unit has access to every other unit.

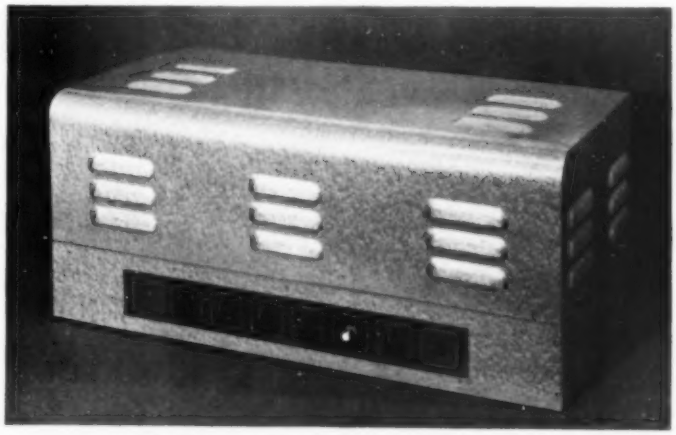
Refinements of the system include *Portograph* door control equipment and *Hurryphone* equipment. *Portograph* prevents interruptions, as it gives a visual indication of the executive's availability. *Hurryphone* is designed for the executive who does not want a reply but wishes to call out—e.g., into a drawing office to ask for a plan or other document.

Dictograph Telephones are also responsible for the *Dicto-Call* system of sound control and staff location, which includes automatic regulation of working hours by time signals, music while you work, mass address to employees, fire, accident, burglar and breakdown alarms, instructions to staff, etc.

The Soundmaster intercom.

Hadley Sound Equipments. Stand 16.

THE *Multicom* system featured by this company consists of a number of indentical instruments linked together through an automatic exchange. The result is that every point can call any of the other points simply by pressing a switch and can hold clear, loud-speaking conversations. For confidential conversations, extensions can be supplied with telephone handsets. The *Intercom* system, which is also



Portable radio amplifier by Hadley Sound Equipments.

INTERCOMMUNICATION EQUIPMENT

shown, is a variation providing loudspeaking communication between master station and extensions.

Public address equipment shown includes amplifiers for small, medium and large installations as well as a new portable amplifier for the smaller firm. All equipment can be used for relaying music, messages and time signals.

Modern Telephones (Great Britain) Ltd. Stand 93.

INTERNAL telephone systems serving from two rooms to 50 rooms, at rentals from 1/6d. per instrument per week, are shown by this company. The exhibits include *Modern* internal telephones and loudspeaker master stations; *Telesound* combined intercom. and broadcasting systems; *Telespeaker* telephone and/or loudspeaker in one small instrument; *Teleport* house door phones; and the *Modern Minor* inter-room system.

Most popular instruments are those of the push button type. These give instant intercommunication between all points and conversations can be held simultaneously between any two points.

The *Telesound* system consists of push button instruments with loudspeakers fitted at any points in the premises where it may be desirable to speak to several people in a room rather than to one individual. Reply is made through the loudspeaker.

The *Telespeaker* is a small size instrument combining intercom. 'phone and loudspeaker and is available for export only.

The Reliance Telephone Co. Ltd. Stand 97.

THE following exhibits are being shown on this stand: *Reliance* private automatic exchange telephone systems, press button intercommunicating telephone systems (with and without loudspeaking master stations), sound reproduction systems for broadcasting music, time and alarm signals, pageing personnel, etc.; and both luminous and audible staff location systems.

The *P.A.X.* systems meet the needs of all kinds of organizations, large and small. Although no operators are required, the systems provide full and automatic intercommunication. Circuits and apparatus are designed to eliminate cross-talk, overhearing and listening-in.

Standard Telephones & Cables Ltd. Stand 67.

UP to 15 executives or departments can be in immediate touch, either singly or in conference, with the aid of the loudspeaking telephone system shown by this company. With its black finish and ivory grille, the master station aids prestige as well as efficient communication. A combination of the latest developments in technique and functional design guarantees excellent reproduction.

Other features of the system include: priority for master stations, which employ a distinctive calling signal and illuminate a warning lamp on the instrument being called; conference facilities; secrecy between master stations and other units.

There is a choice of four systems

Internally Yours—

• SAVES TIME AND MONEY
• INCREASES BUSINESS EFFICIENCY

If you have more than two offices, business efficiency demands a reliable intercommunication system. And that means RELIANCE.

RELIANCE Telephone Service keeps your staff at your elbow, in touch with each other and relieves the load on your P.O. switchboard.

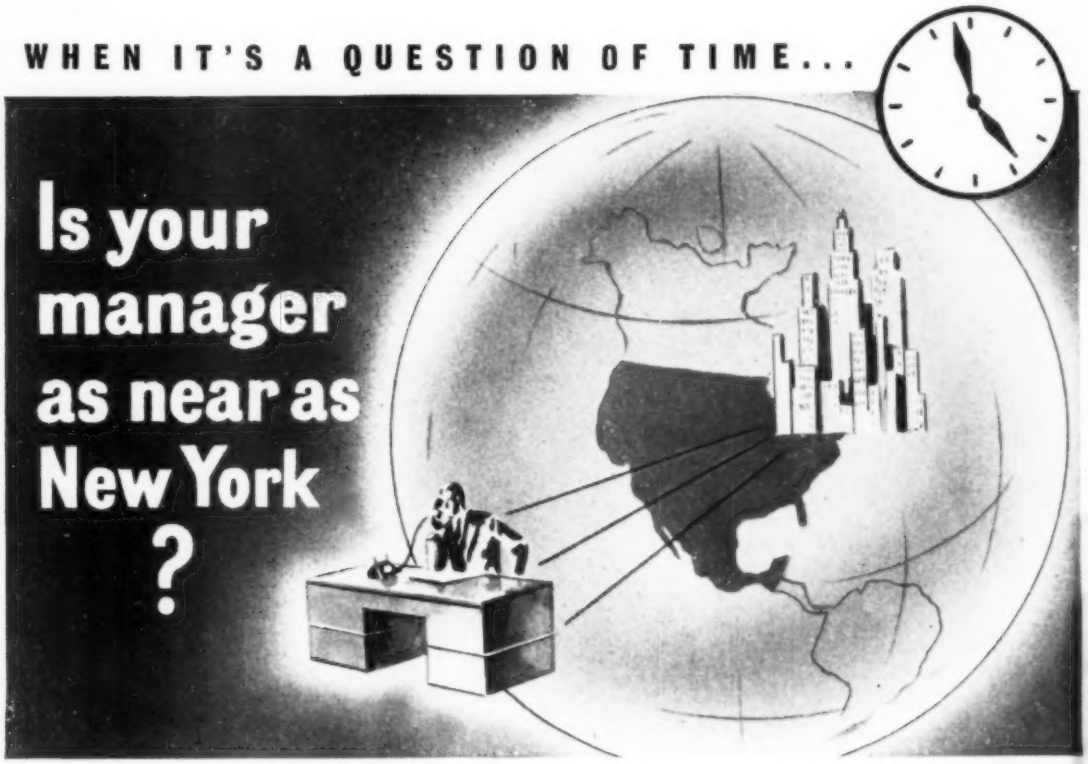
Full details, without obligation, upon request.

★ Visit us at the Business Efficiency Exhibition Stand No. 97

RELIANCE LOUD SPEAKING TELEPHONES

THE RELIANCE TELEPHONE COMPANY LIMITED
(A SUBSIDIARY OF THE GENERAL ELECTRIC CO LTD.)
39-41, PARKER STREET, KINGSWAY, LONDON, W.C.2. Telephone: CHANCERY 5341 (P.B.X.)
BRANCHES THROUGHOUT THE UNITED KINGDOM

WHEN IT'S A QUESTION OF TIME...



IT IS POSSIBLE to speak on the telephone to a man in New York within 15 minutes of asking for his number. Yet, in many organisations it takes longer than that to locate a man 'somewhere about the premises.' To be able to speak with anyone, no matter where they are on the premises, in a matter of seconds, is only one of the many facilities available through T.R. Service. Internal Telephones, Internal Broadcasting, Time Recorders, installed and maintained under guarantee by Telephone Rentals Ltd. — *that's T.R. Service.*

TR SERVICE *speeds production*

INTERNAL TELEPHONES *for speedy speech contact.*

TIME CONTROL *for making man-hours more productive.*

INTERNAL BROADCASTING *for staff location, works relations, time signals, announcements and music.*

DETAILS FROM HEAD OFFICE, DEPT. B. 14, KENT HOUSE, RUTLAND GARDENS, LONDON, S.W.7, OR NEAREST BRANCH · BELFAST · BIRMINGHAM · BRISTOL · CARDIFF · DUBLIN · GLASGOW · LEEDS · LONDON MANCHESTER · NEWCASTLE · SHEFFIELD · OVERSEAS: JOHANNESBURG · CAPE TOWN · PARIS · BRUSSELS

H-F 350

INTERCOMMUNICATION EQUIPMENT

or variations of systems: the first for one or two loudspeaking master stations and up to 10 side stations; the second for one or two loudspeaking master stations and up to 15 side stations; the third for one loudspeaking master station and up to nine side stations; and the fourth for one or two loudspeaking masters and up to 18 side stations.

Included in the display are manual and automatic private telephone systems, staff locators, executives' indicators, etc.

Sterdy Telephones Ltd. Stand 103.

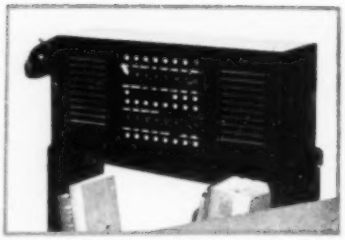
WITH the exception of the master stations, all *Sterdy* cases are made of die cast aluminium, finished with enamel to look like polished plastic. The result is that the units are practically unbreakable. The master stations are finished either in standard medium oak or alternative materials.

Models being shown include: *D*344, a moderately priced instrument designed for a maximum of 6 positions and ideal for smaller offices and factories; *D*407, designed for 8 positions, or alternatively 15 or 22 positions; and *M*516, a loudspeaking intercom. master station providing all standard facilities, i.e., visual and audible signals, loudspeaker cut-out and buzzer cut-out. These instruments operate with sub-stations and conversation is secret.

The remaining exhibits include luminous signals and electric locks.

T.R. Service (Telephone Rentals Ltd.). Stand 57.

"IMMEDIATE contact with selected sub-stations, no matter how heavy the internal telephone traffic may be." This is the achievement of *Paxmaster*, the latest advance in loud-to-loud telephony, which is being shown by T.R. Service. All the refinements of up-to-the-minute telephone practice have been included, plus a number of new facilities, and they have been expressly designed to aid the executive. Another interesting exhibit in this group is the loud-to-loud *Directaphone* for businesses that do not require more than 17 instruments.



Dictograph master station

For almost 50 years Telephone Rentals have provided a nationwide service for industry and commerce. The service includes internal telephones, staff location, internal broadcasting, attendance and job time recording and the night watchman's supervisory and alarm control, each of which can be individually installed and maintained. Many firms use several of these facilities, linking them together in order to save duplication of equipment.

We can imagine just how you feel sometimes—everybody popping in to see you, pushing their heads round the door or ringing you up on the telephone. You must feel as if the whole organisation was clamouring round your desk.

But it needn't be like this—a Hadley Multicom system will restore your peace and quiet and yet retain immediate contact with your key personnel. Harassing moments will be things of the past.

the WHOLE organisation on your desk . . . . .

Illustration: the new 20-way Hadley Multicom for loudspeaking or ordinary telephone communication to all points. Larger installations to requirements.

Hadley Sound Equipments

Phone: SMEthwick 0977
Telegrams: 'Locator'

72, CAPE HILL, SMETHWICK 41, STAFFS.

Agents and Service Branches throughout the Country.

SM/HSE 271A

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STROWGER HOUSE, ARUNDEL STREET, LONDON, W.C.2.

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Proprietors: AUTOMATIC TELEPHONE & ELECTRIC CO. LTD.

CS.12501-T22

TAYLORS *for all makes of* TYPEWRITERS

★ **Adding Machines, Duplicators, Cash Registers, Calculators, Time Recorders, and All Business Appliances BOUGHT, EXCHANGED, HIRED AND REPAIRED**

Save Time—HIRE an Adder for Stocktaking

ADDOGRAPH the simplest Portable, adding, and listing machine—delightful to use. 8 col. to add from ¼d. to £9,999 19s. 11¾d. 9 col. to add from ¼d. to £99,999 19s. 11¾d. Hand and electric models with or without subtraction and wide paper carriages. No modern office can afford to be without one.

THE TAPPIT ALL-RUBBER DAMPER. Ever Ready and Hygienic. A squeeze controls feed of moisture. 2/- post free

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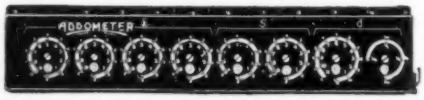
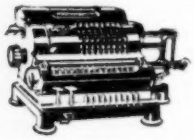


Rapid Automatic Addition and Subtraction. Rests flat on the books. For Decimal or Ordinary Figures and Feet and Inches etc. FOR POCKET OR DESK. So simple anyone can use it. In Plush-lined ducoid case Size, 11½" × 2¼" × ½".

When ordering state for what purpose required.

All models price 6 guineas.



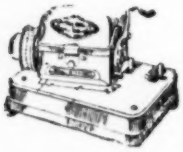
ROTARY CALCULATORS ALL MAKES. For all calculations. Multiply, divide, add and subtract in 1/10th time taken to do so mentally.

★ **WANTED URGENTLY**

HIGHEST PRICES PAID for all Makes of Modern Office Machinery: Adders, Calculators, Cashiers, Addressers, Duplicators, Typewriters, Steel Safes, and Steel or Wood Office Furniture

★ **IN STOCK**

A few Visible Index Systems for sale. Safes, Desks, Chairs and Tables



ELIMINATE LOSS AND FRAUD BY USING A "SAFEGUARD," THE BEST CHEQUE PROTECTOR. Used by leading banks and firms. Do you realise that an altered cheque is your own liability! Price £16 16s. All makes o Cheque Writers at bargain Prices.

TAYLORS TYPEWRITER MARKET

Write, Call or 'phone HOLborn 3793

74 CHANCERY LANE (Holborn End) LONDON W.C.2 *and at Maidenhead*

Office Sundries and Supplies

Columbia Ribbon & Carbon Mfg. Co. Ltd. Stand 4.

"A DAY in the life of a typewriter ribbon" might well be the title of a feature display at this stand. An automatic typewriter fitted with a *Marathon* ribbon demonstrates ribbon life and durability under continuous working conditions.

Results of advanced techniques in carbon paper manufacture are also demonstrated. The *Titan* product shows how specially developed carbon paper can be used for a number of different purposes.

The simplified business forms preparation and distribution demonstration which occupies one half of the stand, makes use of *Readymaster* hectograph units operating in conjunction with a spirit duplicating machine.

London Letter File Co. Ltd. Stand 28.

TELEPHONE directories inevitably become "dog-eared" and tattered if continually in use. One answer to this problem is the ring or wire binder specially designed to protect the much-used reference guide.

Besides other ring, wire and loose-leaf ring binders on display, this company is also showing the *Tenet* "non-skid" desk pad, and the new *Tenet* letter sorter.

Moore's Modern Methods Ltd. Stand 35.

A BINDING case is the latest product in the "Sundries" range shown at this stand. Designed so that the enclosed sheets will lie perfectly flat, it is included in a further display of specially designed covers for loose-leaf catalogues, price-lists and advertising literature.

National Loose Leaf Co. Ltd. Stand 3.

LOOSE-LEAF books with distinctive "D" shaped rings are included in a series of ring books and memo ring pocket books shown at this stand. Named the *Natdec*, this 8cm. gauge book is also made in many sizes and capacities.

Ofrex Ltd. Stand 6.

A HIGH-GRADE range of typewriter ribbons and carbon paper named *Gold Script* forms the main feature of the display at this stand. The carbon has a metalised, reinforced gold back, and the ribbon fabric is of extra-fine quality. This last allows an additional yardage to be wound on every ribbon spool.

The remainder of the display includes: newly designed stapling machines, including the sturdy *Robust* model; *Speedfix* tape for strengthening, sealing, securing and repairing documents, etc.; the *Auto-Guide* edge binder; and the *Ofrex Reinforcer*, a punching and reinforcing machine.

Ofrex heavy duty stapler.

The Gladiator guillotine manufactured by Standard Office Supplies Co.

Remington Rand Ltd. Stands 45 & 55.

THE *Remrandco*, *Paragon* and *Regal* brands of typewriter ribbons are supplied correctly spooled for all typewriters and office machines. Single and two-colour ribbons are also available for record writing, the copy press, spirit processing and other types of work.

The right kind of carbon paper for every kind of office typing job can also be picked from a comprehensive range offered by this company. The difference in weight, colour, size, type and quality of paper chosen is often the controlling factor in the production of good carbon copies.

OFFICE SUNDRIES AND SUPPLIES

H. M. Rose & Co. Ltd. Stand I.

THE standard ranges of carbon papers, ribbons, stamp pads and endorsing inks on display at this stand are produced under the names *Totem* and *Tomahawk*. A high grade carbon paper and typewriter ribbon, called *Sylvan Wove* is also shown.

Standard Office Supplies Co. Stand 84.

MACHINES that will negotiate almost any type of stapling job are included in this firm's range of general office products. Hand, treadle and electrically operated equipment is being featured.

Equipped with an accident-proof safety guide, the *Gladiator* guillotine for trimming paper, cards, photographs, leather, etc., is adjustable for cutting any size up to 13in. by 13in. The machine has a high quality blade and is mounted on a non-warping wooden base fitted with rubber feet. The fitted brass rule is scaled in inches and eighths.

The hand-operated *Drillit* paper drills on show will cut up to ½in. thicknesses in one operation. They are included in a further display which features various coloured steel office equipment, *Thazepitype* cleaning fluid for all types of office equipment, *Readesy* shorthand notebooks (whose patented features facilitate rapid transcription of shorthand notes), and the 400-page combined notebook and stand.

Treadle stapler by Standard Office Supplies Co.

Underwood Elliott Fisher Ltd. Stands 19 & 32.

THE trade name *Ellwood* covers an almost inexhaustible range of office supplies from oil cans to paper fasteners.

Many different weights and qualities of carbon paper with varying degrees of finish are available for all requirements. Typewriter ribbons obtainable in a combination of colours for every machine are made from a carefully spun fabric which absorbs a maximum quantity of ink.

Other products include cleaning brushes and outfits, loose-leaf day books, duplicator supplies, erasers, keycaps, shorthand notebooks, type cleaners and stencils.

The World's smallest Giant

The EMPIRE *Aristocrat* portable typewriter is a veritable giant in performance, with many of the usual features of a first-class "unportable"—yet it weighs only 8¾lb and stands no higher than a matchbox! It accompanies business men, secretaries, journalists, novelists, lecturers— all who have writing to do—on their journeys at home and abroad, it stands up to any amount of work like the true Britain it is. The EMPIRE *Aristocrat* in fact makes a good impression—*anywhere*. Price 19 guineas

EMPIRE *Aristocrat*

BUSINESS EFFICIENCY EXHIBITION, OLYMPIA JUNE 6th-16th STAND F52

The most PORTABLE TYPEWRITER in the World

Made by British Typewriters Ltd. West Bromwich · London: 31 High Holborn, W.C.1.

YOUR LETTER IS YOUR REPRESENTATIVE

First and lasting impression . . . . . .

A well typed letter, like good stationery, is a credit to the sender and a compliment to the recipient.

Choose your typewriter Ribbons with care and

CHOOSE BARCO first and last

M. Richardson & Sons, Ltd.

Manufacturers for over 60 years.

147-9 CANNON STREET, LONDON, E.C.4. ENGLAND.

BARCO

CARBONS & RIBBONS

THE NEW **"ACE"**

PEDESTAL FOOT POWER STAPLING MACHINE

Fastens together a large Variety of Materials of all Descriptions, Office Papers, etc.

Model No. 111

Also Model No. 100 HAND LEVER ACTION

The 'GLADIATOR' Guillotine

For TRIMMING PAPER · CARD PHOTOGRAPHS LEATHER Etc.

Guaranteed for 3 Years

Retail price:

£9-9-0

TAX FREE

STAND No. 84.

BLADE:—Finest Quality Self-sharpening Sheffield Steel.

BASE:—Non-warping, wooden base, fitted with RUBBER FEET.

IVORINE RULE:—Scaled Inches and Eighths.

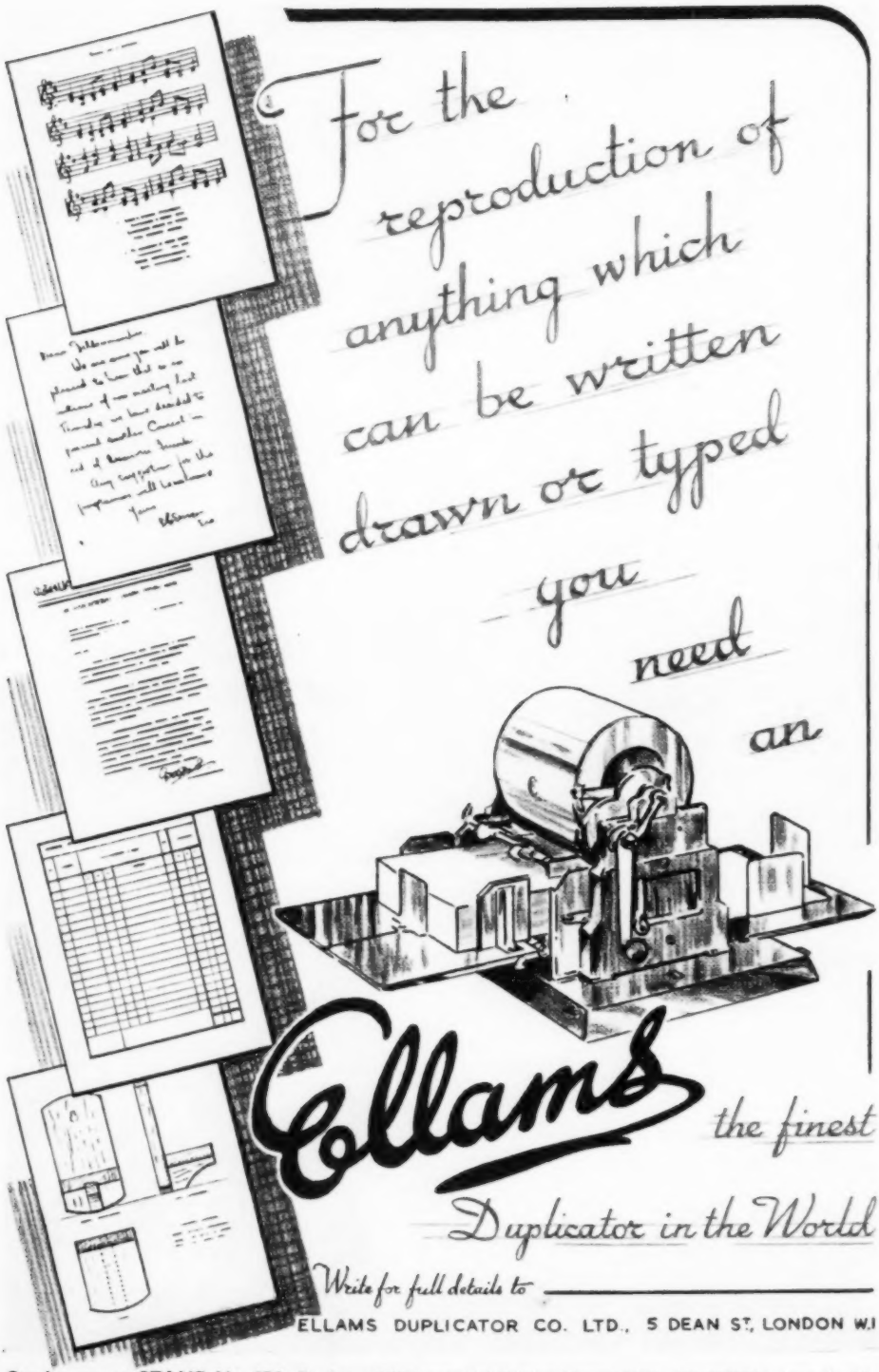
GUARD:—Accident proof Patent Safety Guide. It also ensures a straight edge.

GUIDE:—Adjustable for cutting any size up to 13" × 13".

The **Standard** OFFICE SUPPLIES COMPANY

Phone CHANCERY 5561 (4 Lines)

57, FARRINGDON ROAD LONDON E.C.1.



Can be seen at STAND No. 27A. Business Efficiency Exhibition Grand Hall, OLYMPIA, June 6—16.

Printing, Copying and Duplicating Equipment

Addressograph - Multigraph Ltd. Stands 79 & 100.

THIS company make a point of showing their machines in action. Being demonstrated are two *Multilith Model* 1250, and three *Model* 50, offset duplicators, one 1250 being employed on multi-colour work. The 50's demonstrate systems and similar jobs, one of them being used in conjunction with a class 1900 machine for producing copies from *Duplimat* masters which have already been imprinted from the plates. A *Multigraph Model* 259 letterpress duplicator produces facsimile letters, business forms and the like.

The 1250 is a completely automatic duplicating machine producing high quality stationery and sales literature in monochrome or multi-colour lithography. Paper and/or metal duplicating masters are easily prepared by hand or typewriter and produce faithful reproductions of typewriting, manuscript, pencil, pen-and-ink and brush drawings, carbon-paper tracings, etc. The *Model* 50 machine works on the same principle. Though intended for general purpose duplicating, it has been designed with special regard to using the pre-printed *Duplimat*.

Block & Anderson Ltd. Stands 65 & 75.

NEW duplicators and systems machines are making their debut as well as the full range of established products which are shown on the Block & Anderson stands. The display includes the *Banda* 90 series of duplicators which use neither ink, stencils nor gelatine and reproduce all forms of written, typed and drawn matter in several colours at one operation.

Masters are attached and released in an instant by flicking over one small lever. One model takes paper up to 14in. by 9in. in size, another takes it up to 17in. by 14in.

Another exhibit is the *Banda* typewriter attachment, which can be fitted to most standard makes of typewriter. The device holds a 100-foot *Banda* transfer roll and eliminates the constant handling of the individual transfer sheets when numerous typewritten masters are prepared. The roll is moved automatically by the movement of the spacing lever.

Bulmer's Calculators Ltd. Stand 44.

BULMER'S *Rotary* 50 is a modern, hand operated rotary duplicator with automatic inking and paper feed. It sells at a low price but has an impressive performance. The automatic paper feed and automatic inking, normally associated with high-priced machines, ensure speedy production, cleanliness in operation and perfection of copies. The built-in counter saves time and wasted copies.

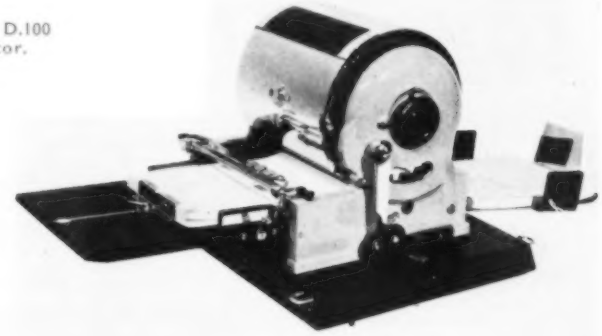
Burroughs Adding Machine Ltd. Stands 48 & 53.

NINETY-NINE-AND-A-HALF per cent. of filing space is said to be saved by putting documents on microfilm. Photographic facsimiles eliminate errors in copying and enable original and valuable documents to be put in a safe place while the microfilm is used for day-to-day purposes. Transport of heavy originals is avoided.

Conscious of the growing use of microfilm in business and industrial circles, Burroughs Adding Machine have taken on the distribution of the G.B.-Bell & Howell microfilm equipment, which consists of three main units—a recorder, processor and reader. The recorder is an attractive machine rather like an office desk Largely automatic, it deals with any one of three film patterns. The processor is a complete unit for processing exposed films in broad daylight. The film is automatically processed, dried and re-spooled at the rate of 100 feet every 10 minutes. The reader is a handsome cabinet standing on any convenient desk or table.

Copycat Associated (Marketing) Ltd. Stand 105.

NEW and standard items of equipment are shown on this stand. Exhibits include the *Junior, Standard, Imperial, Delph* and *Antiquarian* photo-copying machines. The *Junior* is a portable model operating by pressure contact. Its printing area is 18in. by 14in. The *Standard* is specially designed for use in offices and works by pedal-operated pressure



Ellams' D.100 Duplicator.

"Fine... Let's have 50 photo-copies by tomorrow!"

Our chairman is a man of few words: he doesn't believe in talking when pictures can tell the story.

Whenever there's a board meeting, client's visit, or works get-together, everybody has a photo-printed copy of the plan, design, or drawing to be discussed.

The chairman saves his breath, and the firm saves time and money. WEST photoprints cost as little as 5d. each, and can be produced while you wait, or in 24 hours by post. WEST copy anything, by various processes, and reproduce on paper, cloth, cellophane, glass or metal—in colour if required.

Photoprinting is a valuable business ally — it puts everyone in the picture and helps to put your story across.

WEST

photo-copies

Please write for full details or send your work direct to

A. WEST & PARTNERS LTD.
Established 1888
36, BROADWAY, WESTMINSTER, S.W.1.
TELEPHONE: WHITEHALL 5677

contact. It has the same printing area as the *Junior*.

The *Imperial* is for offices where large-scale production of copies is required but it can also be used for laying down litho-plates. Lid-operated with vacuum contact, the printing area is 30in. by 20in. For drawing offices there is the *Delph* which is ideal for making copies from pencilled cartridge paper drawings on to paper, tracing paper or tracing cloth, and for copying dye-line prints.

Dapag (1943) Ltd. Stand 80.

DAPAG have three main products: the *Tickopres* range of machines for overprinting changeable details on to labels, tickets and tags which are supplied in roll form; the *Imprima Little Giant* printing machine for overprinting details on to labels, tickets and tags supplied singly; and the *Langapres* universal printer for overprinting labels, tickets, tags, cartons, box ends, envelopes, etc.

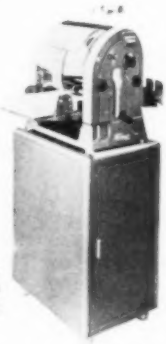
Of all these machines, the one creating particular interest is the latest model *Tickopres BMR* which prints areas up to 4¾in. wide by 4½in. deep. The machine is fully adjustable to any in-between sizes and can be operated by a junior.

This particular machine also incorporates the Dapag quick setting type method and prints on to paper, gummed paper, all grades of card and manilla, linen backed paper and linen centred paper, cotton, satin and rubberised satin.

Ellams Duplicator Co. Ltd. Stand 27A.

FAULTLESS operation was the aim of Ellams when they designed and proved the up-to-date features of their latest *M*.100 and *D*.100 electric and hand rotary duplicators.

One of the innovations is a straightforward, efficient and fully automatic system of continuous inking which follows this sequence: a complete tube of ink is poured into a trough inside the drum, which is then sealed. The trough is swung into the "inking on" position, the drum is revolved, and the ink penetrates the cloth. The



The Rex-Rotary duplicator with automatic inking.

cut stencil then takes just the amount of ink needed for one copy, and the trailing edge of the trough automatically removes and replaces the surplus ink.

Depth or lightness of the copy can still be governed by the operator, who can alter it by changing the speed or pressure.

Other exhibits include the *D*.10 self-feeding rotary duplicator and the *Illuminated Diaphragm* model.

Frank R. Ford Ltd. Stand 15.

A FULL and revised range of spirit process duplicators appears on this stand. Outstanding among them is a new machine incorporating automatic paper feed, automatic master change and automatic fluid control. The last is achieved by applying fluid with rollers instead of the more conventional devices like felts, wicks, pumps, taps, valves, etc.

Another important exhibit is the *Fordigraph Monarch*, a fully automatic machine for efficient and rapid reproduction. It makes an interesting comparison with a number of low-priced machines which appear in the revised products group.

Gestetner Ltd. Stands 85 & 95.

TO mark the 70th anniversary of the company, Gestetner have introduced an entirely new series of duplicators comprising three models—the 180, 180A and 180B. Each model is basically similar: the difference lies in the maximum size of work which can be accommodated. The feed can be

"he's delighted with my duplicating

"He's pleased as Punch with these perfect copies—told me the firm's printing costs have dropped 50% since I started duplicating all our forms and stationery. Of course, my Gestetner deserves most of the credit—automatic inking makes operating so simple and clean.

"Give me GESTETNER †every time"

† *That's equally sound advice for operators and those who have to watch costs. See latest models at our Stand, B.E.E., Olympia*

Gestetner

duplicators in use throughout the world

GESTETNER LIMITED · ALDWYCH HOUSE · LONDON · W.C.2. HOLborn 8700

PRINTING, DUPLICATING and COPYING EQUIPMENT

easily adjusted to handle all sizes of paper from single cards measuring 5in. by 3in. and upwards as follows: Model 180 — maximum paper size 17¼in. by 14½in. and maximum printing area 16⅝in. by 13in.; model 180A — maximum paper size 17¼in. by 17¾in. and maximum printing area 16⅝in. by 17¼in.; and model 180B—maximum paper size 17¼in. by 19¼in. and printing area 16⅝in. by 18¾in.

The switch from very large to very small work can be made with ease, and the *Express* inking system by vacuum pump gives perfect, even and controlled distribution of ink, irrespective of the size of the copy. The machines are power driven and produce up to 60 copies per minute.

The remaining exhibits include the *Hotel*, *Educational* and 160 models, and the *Gestetprint Office Process*. The *Hotel* model reproduces perfect copies of everything from billheads to bridge score cards, as well as colour work.

Gutteridge Sampson Ltd. Stand 24.

THOUSANDS of people are still using the original *Emgee Memo Stamp*. Now it has been re-designed in "desk blotter" style with a larger printing area. All the user has to do is type or write his message on the stencil and the *Memo Stamp* is ready for action. After printing the first 500 copies, a wipe with the ink brush renews its activity for a further 500—over and over again.

The *Emgee Large Memo Stamp* —to give the machine its correct name—is sold in an outfit which includes writing plate, tube of ink, 24 stencils, stylus pen, inking brush and strong hold-all carton.

Kodak Ltd. Stand 87A.

KODAK are showing an interesting range of microfilm and photographic reproducing equipment. Chief among these are the *Commercial Recordak*, the *Microfile* camera, the *Library Reader*, the *Junior Recordak* and the *V.P. Auto* numberer and endorser.

The Banda 90 spirit duplicator.

By hand feeding documents into a chute, the motor driven *Recordak* enables photographs of quantities of office records, cheques, invoices documents, etc., to be made on 16mm. film at a speed of 2,000 to 6,000 per hour. A spool of film occupies about one per cent of the space used by the original documents.

The *Microfile* camera is a general purpose instrument for use on desk or table. It takes subjects as large as 17in. by 25½in., and

Microfilm Recorder and Projector in one . . .

See the new

'RECORDAK' Junior Machine

at Stand No. 87a

This is a self-contained unit, combining a camera for making 16mm. microfilm records and a projection device for reading the image. Special feature is the movable guide-bar which accommodates documents of varying lengths (up to 14 ins.); its movement controls the film-advancing mechanism, thus avoiding film wastage.

The 'Recordak' Junior is ideal for office use; it will stand on desk or table and is extremely simple to use. (Operator at left is able to use adding machine as she records invoices.)

* * *

Other equipment for photographic recording of office correspondence, documents etc. on view includes the Commercial 'Recordak' Machine; the 'Kodak' Micro-File Camera, Model A.H.; the 'Kodak' Library Reader, Model A.H.; and the 'Kodak' V.P. Auto Numberer and Endorser, a new accessory designed for use with the Commercial 'Recordak' or independently.

RECORDAK DIVISION OF

KODAK Limited

Adelaide House, London Bridge, London, E.C.4
Tel: MANsion House 9936
and at 11 Peter Street, Manchester, 2 Tel: Blackfriars 8918

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SPOTLIGHT ON TIMESAVING

in every factory packing department

Dapag OVERPRINTING MACHINES

FREE TEST OFFER

Slip a dozen of your tickets and labels into an envelope with the details you would like to be overprinted. One of our girls will overprint them for you.

★ **YOU WILL BE AMAZED AT THE RESULTS**

End- *WRITING BY HAND RUBBER STAMPING PRINTING DELAYS.*

Any boy or girl in your factory using DAPAG overprinting machines can overprint all the details on to any quantity of your labels, tickets, tags, etc.

Typesetting is extremely quick and simple. All the details are printed in one operation at every turn of the handle.

Sales and Service available in all areas of the British Isles

Dapag (1943) ltd 23 HOLBORN VIADUCT LONDON, E.C.1 City 5373/4

PRINTING, DUPLICATING and COPYING EQUIPMENT

office staffs can quickly learn to operate the few simple controls and turn out work of the highest quality. The magazine holds 100 feet of 35mm. film on which 800 originals can be recorded full frame size, or 1,600 at half frame size.

For viewing microfilms there is the *Library Reader* which provides a reading area of 18in. by 18in. A dual purpose microfilming machine combining camera and reader is the *Recordak Junior*. The *Auto.* numberer and endorser is intended for use with the *Commercial Recordak*, but can be worked independently for endorsing cheques, numbering office records, documents, etc.

Office Machinery Ltd. Stand 8.

AFTER several years of research, a new and automatic system of inking has been evolved and incorporated in the new *Rex-Rotary* model *D-270* duplicator. An ink cartridge is inserted in the machine, a wheel is set according to the number of lines of text, and the machine does the rest. From the first to the last copies, the inking is uniform in depth and without stripes or blurs.

The Roneo machine for the electronic production of stencils.

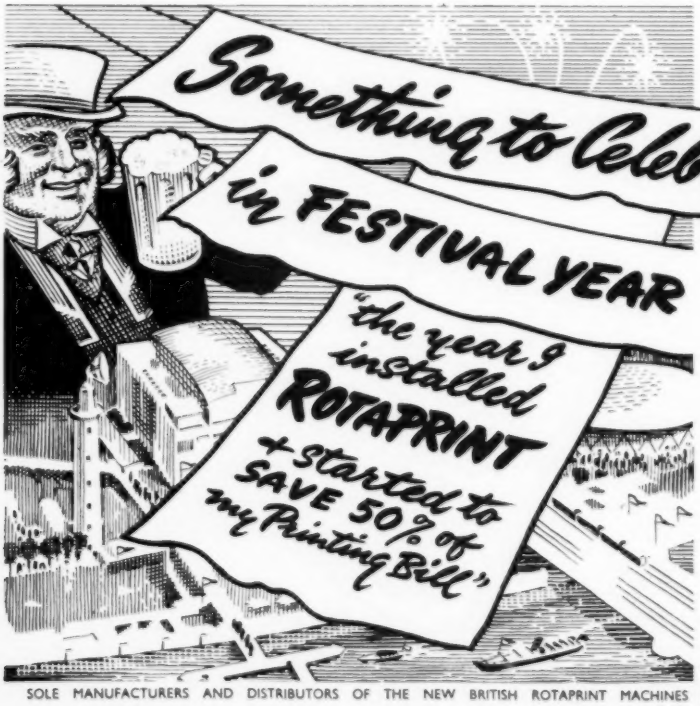
The system uses a thin paste ink which gives clear, distinct impressions and is very economical to use. The ink also prolongs the life of the stencil and eliminates paper dust. It does not penetrate very far, so that it is possible to duplicate on both sides of even comparatively thin paper.

The machine has been re-styled in an elegant steel grey, with deep wine handles and accessories. The capacity of the paper tray has been increased to take 500 sheets of heavy paper, and the motor has been improved.

Roneo Ltd. Stands 64 & 76.

THE range of Roneo duplicators shown this year includes the 500 foolscap size automatic inking machine, the *Policy* wide printing duplicator which prints on paper measuring up to 18in. by 14in., and the 150 portable model with automatic inking.

Continued on page 168



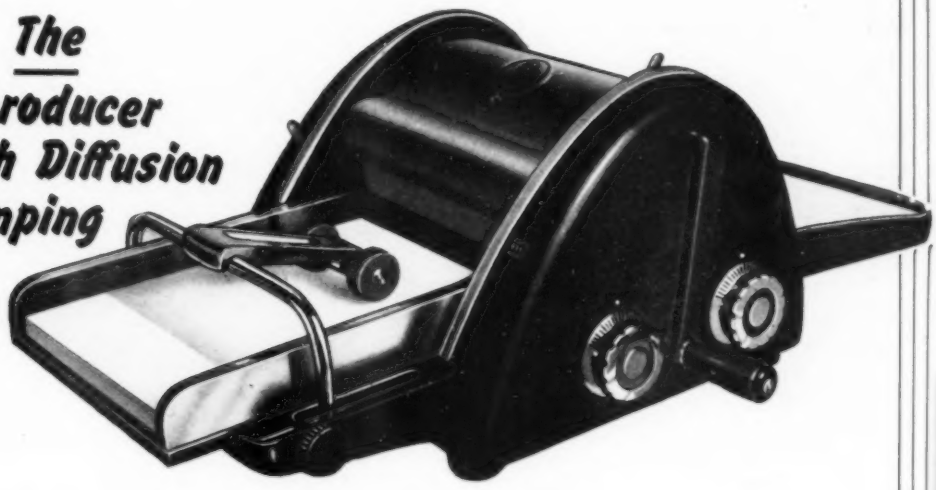
B.E.E.
Stand Number 74

FOR PARTICULARS WRITE OR PHONE
KAYE'S Rotaprint AGENCY LTD.
ROTAPRINT HOUSE
HONEYPOT LANE
LONDON, N.W.9
COLINDALE 8822
(12 LINES)

SOLE MANUFACTURERS AND DISTRIBUTORS OF THE NEW BRITISH ROTAPRINT MACHINES INCORPORATING THE ROTAFOUNT (Patented)

"THE PELICAN"

The Reproducer with Diffusion Damping



SIX MILLION DROPS!

Pelican diffusion damping employs six million microscopically small drops, which are applied with mathematical precision to the paper used. The volume of the drops can be varied according to the size of paper and the number of copies required — a factor which contributes to the high operating efficiency of the Pelican machine.

Moreover, Diffusion damping does not restrict the paper to be used to the hardsized or super-calendered type since all types and surfaces of paper can be used with equally satisfactory results.

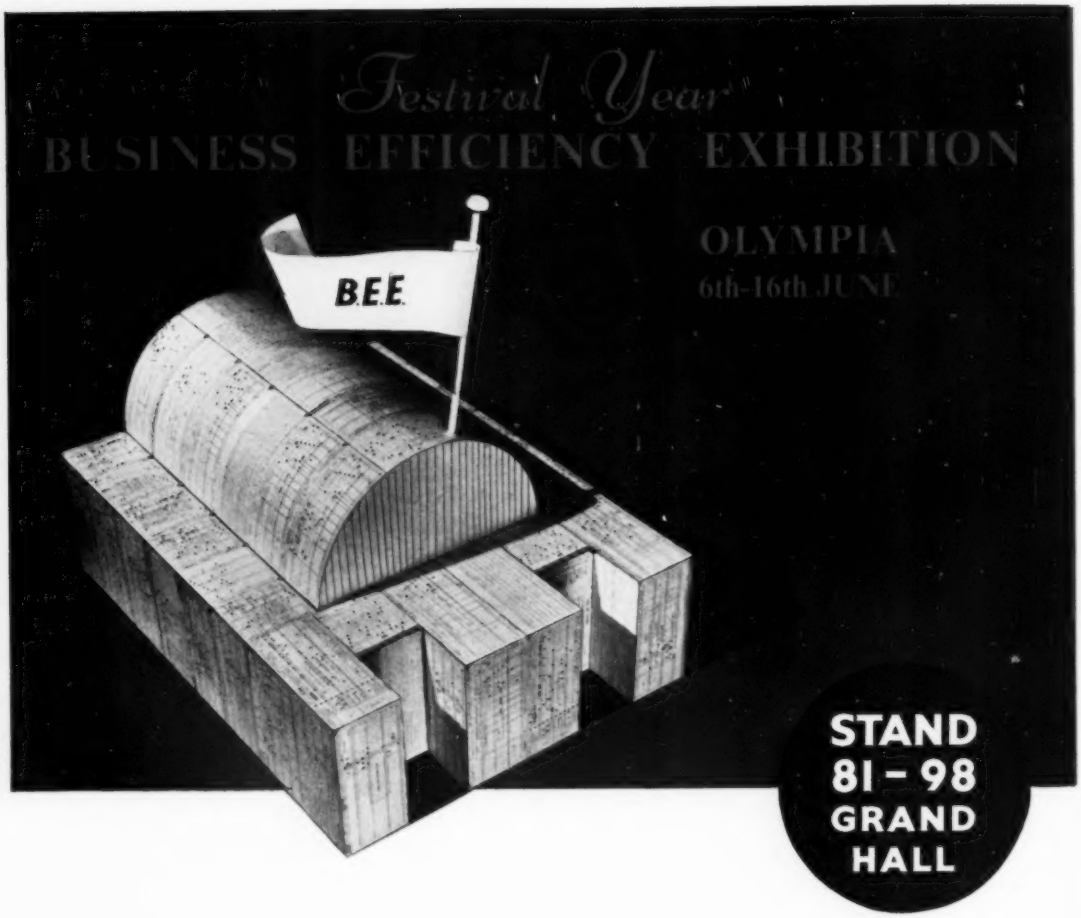
THERE'S ALWAYS ROOM FOR A PELICAN!

- For smooth surfaced paper the supply of spirit is more restricted. A movement of the regulating knob and the correct supply of fluid is automatically adjusted.
- Diffusion damping ensures that too much dye is not taken from the original, thus reducing wear. Even with highly absorbent paper one original is sufficient for numerous copies.
- The automatic paper feed greatly assists the operator. Any size of paper from Foolscap to postcard size is firmly gripped and evenly fed.
- The automatic locking device safeguards the original whilst it is in the machine. By automatically operating when the supply of paper is interupted, it prevents the pressure roller from damaging the original.
- When small forms or short texts are used the paper can be limited to the length of the text or form, thus conserving spirit.
- The spirit cannot flow after printing, as damping automatically ceases when the cylinder stops turning.

SOLE CONCESSIONAIRES FOR THE BRITISH ISLES AND THE BRITISH COMMONWEALTH

MAXLOVE "CONTINUOUS" LIMITED

107, SOUTHAMPTON ROW, LONDON, W.C.1. TELEPHONE : MUSEUM 4985



. . . be sure to see Britain's latest developments in

ELECTRICAL PUNCHED CARD ACCOUNTING

"HOLLERITH"

REGD.

CODING & REFERENCING CONSULTANCY SERVICES

SERVICE BUREAUX

THE BRITISH TABULATING MACHINE COMPANY LTD

Head Office: 17 Park Lane, London, W.1. *Telephone: REGent 8155.* *Branches in all Principal Towns*

REVIEW OF EXHIBITS

Punched Cards and Ancillary Equipment

Art Metal Construction Co. Stand 42.

OF interest to punched card users is the Art Metal tabulating card file, an example of which is being displayed on their stand.

This unit has been designed specifically for housing punched cards and a distinctive feature is the lift-out card trays. Although the tray forms an integral part of the cabinet, it is removed without disturbing the suspension. Each tray holds approximately 3,500 cards, making a total of 77,000 cards per cabinet. Naturally this total varies slightly according to the size and thickness of cards employed.

The British Tabulating Machine Co. Ltd. Stands 81 & 92.

MOST executives have, by now, an appreciation of the general scope of punched card equipment as applied to the modern business, but for those who are still unfamiliar with punched card technique a comprehensive selection of *Hollerith* machines are to be seen at the exhibition. The latest advances in *Hollerith* machines are being displayed and an example of the latter is the reduction in the use of manual punching by the introduction of the *Reproducing Punch*. Data formerly hand written may be recorded by a series of pencil marks on the face of a card, these being transcribed into punched holes at a uniform speed of 100 cards per minute by the *Mark Sensing Reproducer*.

Where manual punching is still necessary, the operation is speeded up by the use of the *Keystor Punch*, which includes automatic feed and ejection of cards. Operator time is saved as a fresh card is in process of being set up, whilst the preceding card is punched.

For the verification of cards there is the *Programme Board Verifier*, which not only provides visual evidence that cards have been checked, but, in addition, is flexible so that arrangements can be simply made to skip sections of a card where verification is not required.

Another piece of equipment which is of great interest is the *End Printing Reproducer*, which enables weight digits to be printed in two positions on a punched card and is of particular value where one portion of this card acts as a tag and can be perforated.

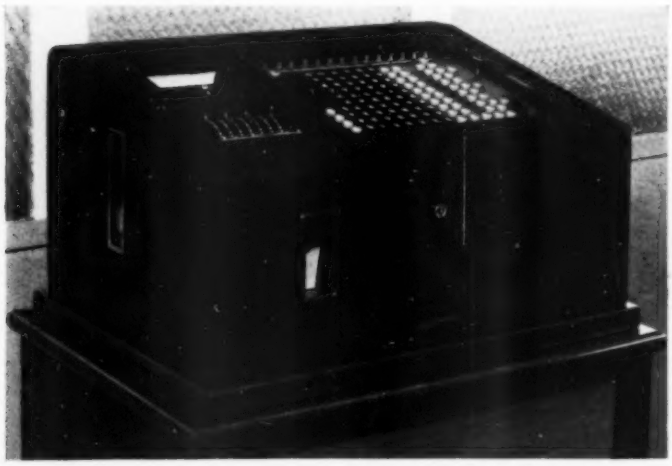
Hollerith type 504 multiplier.

A sorter with a maximum speed of 40,000 card passages per hour, a new multiplier for direct sterling multiplication, and the *Transfer Interpreter*, are of equal interest. Finally, the usual punches, verifiers, sorters and tabulators are displayed.

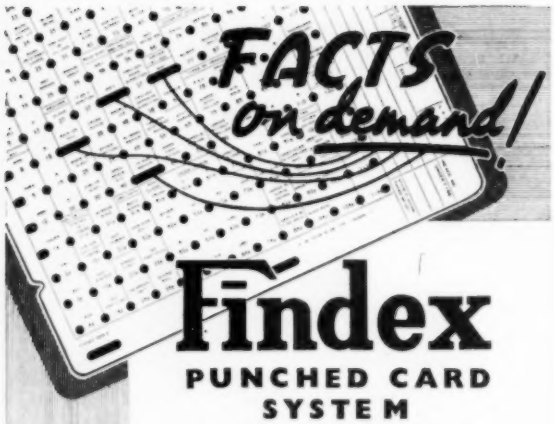
To gain the benefit of the *Hollerith* method of punched card accounting, it is unnecessary for firms to install their own machines, as there are service bureaux throughout the British Isles that handle clients' work.

C. W. Cave & Co. Ltd. Stand 51.

ONCE again this company are showing their well known *Findex* hand operated punched card system. Subjects that can be covered by the equipment include staff, customers, plant, medical, housing and many other types of records. In addition it can be used for research and statistical purposes. The *Findex* equipment enables any combination of questions to be selected in a single positive operation without disturbing the filing sequence of the cards.



Making its first appearance. The Powers Sales Recorder.



Findex

PUNCHED CARD SYSTEM

FINDEX is a unique method of selecting records by cross classification.

FINDEX selects the cards, quickly and accurately, presenting ANY GROUP on demand without disturbing the filing order of the cards.

FINDEX can be handled as freely as an ordinary card index.

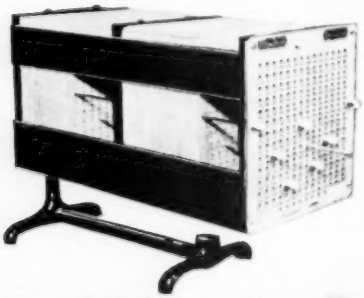
FINDEX provides for many kinds of sub-divisions, and the number of classifications is almost unlimited, and eliminates the need to inspect every card in the index—a monotonous and fatiguing job.

FINDEX is NOT a ready-made system—every installation is arranged specially to fit the needs of its users.

Wherever cross indexing is necessary, or wherever cards must be selected in groups, **FINDEX HAS NO EQUAL!**

If **FINDEX** was the most expensive method of keeping records ever devised it would still justify its cost and prove itself to be the most economical because of its unusual ability to produce facts on demand.

You are invited to investigate—without obligation. Our experience is at your service.



C. W. CAVE & CO. LTD.,
59 HOLBORN VIADUCT E.C.1
CENtral 3778 9

PUNCHED CARDS AND ANCILLARY EQUIPMENT.

International Time Recording Co. Ltd. Stand 41.

A COMPLETE range of punched card equipment manufactured by International Business Machines is being shown for the first time at this year's exhibition. At present the equipment is being produced in the U.S.A. but plans are well ahead for manufacture in this country.

Taking the machines in their logical order of use there is, first of all, the electric card punch, which registers both alphabetical and numerical information in the cards. The automatic features and simplicity of the machine make the transcription of written data into punched hole form an easy operation.

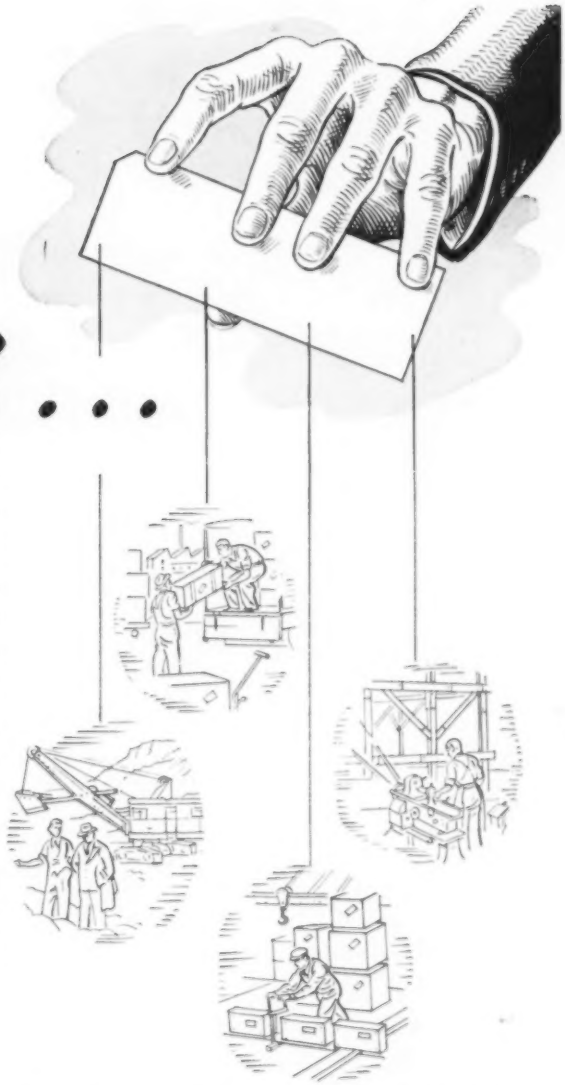
The second of the new machines is a sorter, which automatically arranges IBM cards into alphabetical or numerical sequence according to any desired specification.

Lastly, there is the punched card accounting machine, which enables information to be added, subtracted, classified and listed with totals and net balances, etc. This machine allows three lines of printing to be incorporated with other information into only one card. Three line printing uses fewer cards, reduces errors in transcription and saves time. The machine prints at speeds of either 80 or 100 lines a minute and accumulates data at speeds of 80 or 150 cards a minute.

Continued on page 150

The new Tape-Card Punch.

Complete and flexible CONTROL . . .



Business and administrative control should be complete and flexible with the ability to achieve continuous review and rapid adjustment — like the hand controlling the marionettes. The Powers-Samas punched card system gives you this ability. Whether you wish to review a business transaction, a manufacturing operation, costing element or factory activity, punched cards will give the current picture at once, analysed and interpreted for you. This means — among other advantages — that loads can be adjusted, overlapping avoided, costing kept under constant review and any losing operation disclosed immediately.

There is a range of Powers-Samas machines to suit all needs and budgets. Please write for further details.

POWERS-SAMAS ACCOUNTING MACHINES (sales) LTD.

POWERS-SAMAS HOUSE · HOLBORN BARS · LONDON EC1

SAFE and Sound!

The startling fact about fire-loss is that 43% of all businesses whose premises are burned out never open their doors again! It's true that neither steel equipment nor "fireproof" buildings will burn, but their contents will and often do. Since metal is an excellent conductor of heat, ordinary steel equipment will incinerate its contents within a matter of minutes.

THE GREATEST BUSINESS TRAGEDY IS THE LOSS OF PAPERS AND BOOKS WHICH WERE THOUGHT TO BE PROTECTED. Once a firm's records have been destroyed, it is only with very great difficulty that the business can be resumed.

Tests by independent authorities have established the fact that Remington Rand certified products give the highest known degree of protection against fire.

Remington Rand SAFE CABINET

Fuller details concerning this vital subject of real protection against fire-loss will gladly be sent on request to Dept. SC.14

REMINGTON RAND LTD. (SYSTEMS DIVISION), 1 NEW OXFORD STREET, LONDON, W.C.1

Safes—Fire and Theft Protection

Chubb safe cabinet.

Chubb & Son's, Lock & Safe Co. Ltd. Stand 46.

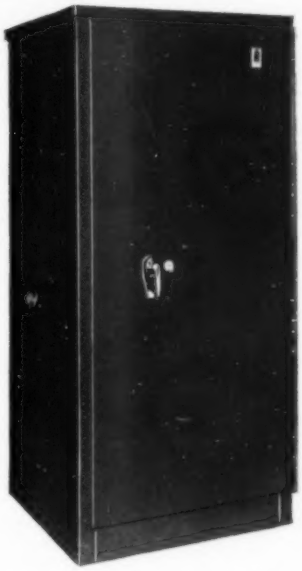
THE various devices used by "safe crackers" to gain entry into storage vaults and safes present real problems to the strong room designer. Exteriors must be made to resist such methods as the oxy-acetylene blow-pipe, the electric drill and various types of explosives.

One attraction of the Chubb display of highly burglar-resistant units is the massive strong room door. An exact replica of one supplied to a Canadian bank is being exhibited.

The doors open and close like a gun-breech and are pivoted in the middle, using a crane hinge mechanism. This ensures exact, middle-to-middle fit, with no dangerous spaces. Once closed, the doors are compressed together — mirror-finished surfaces coupling to form a water-tight seal. Two highly complex combination locks are fitted to the satin-finished stainless steel doors.

With a 6in. thick door and 4½in. thick body, the *Office Quality Safe* on display uses special burglar-resisting armour plate steel. Both body and door are also lined with special fire-resisting material. A feature of this unit is the emergency re-locking device which ensures re-locking should the lock be dislodged by explosive or other means.

Other fire-proof office equipment displayed includes the *Safe Ledger File*. This is a mobile container which has been tested for over one hour at a furnace temperature of more than 1,600 degrees F., and dropped from a 16ft. height before a further re-heating. Makers claim that the ledger cards were removed completely undamaged. The file is designed mainly for use in conjunction with posting machines—castors being fitted for easy transport about the office.



Remington Rand safe cabinet.

Also subjected to severe heat tests, the *Safe File* on show is available in seven sizes. Separate half-height insert drawers for card records can be obtained, and insert trays for machine posted ledger cards are also available.

Safe cabinets with single or folding doors; special National Health Insurance card fire-proof containers, capacity tray for machine posting; and the safe ledger container are also being displayed on this stand.

Milners Safe Co. Ltd. Stand 86.

A SPECIAL composition which generates moisture when subjected to extreme heat is used in the construction of the fire-proof safes shown at this stand.

The *B Series* safes on display not only embody the above principle in their design but are also fully thief and fall resistant. The total thickness of the body is 4½in. —the outer body being constructed of tough steel plate bent at all 12 corners, and flanged front and back. The back plate is electrically welded flush and smooth, thus making the outer body and back a one-piece construction.

The inner body of the safe is also constructed of tough steel plate, continuously welded along all joints. Between the outer and inner bodies—on all sides—is a

Records container, by Chubb.

SAFES—FIRE AND THEFT PROTECTION

fire-resisting chamber filled with the moisture-generating, non-conducting, fire-resisting composition. The sliding bolts at front and back of the door are controlled by an eight-lever unpickable lock. This is fitted with an anti-explosive device which includes an independent check which automatically obstructs the sliding bolts should the lock mechanism be displaced. The door is secured by 1¼in. steel sliding bolts and is 5¾in. thick.

Available in single or double door models of various sizes, the *B Series* can be supplied with or without interior fittings. The standard finish is metallic grey outside and silver grey inside.

The *Safe Filing Cabinets* shown represent a range of strongly constructed units offering a high degree of resistance against fire, fall or theft. They can be supplied in three or four drawer units with or without a castor base. Strong steel sliding bolts and a fixed bar are used as fastenings and an 8-lever unpickable key lock is the standard locking equipment. Each drawer of the vertical filing cabinet is provided with an adjustable compressor and the whole equipment is finished in a dark green stove enamel.

The light-weight *Whitfield* and *Metropolitan* models on display are strongly constructed and are designed to meet the demands of tradesmen and householders for a light, fire-resistant safe for the protection of valuable books, papers and documents.

Remington Rand Ltd. Stands 45 & 55.

FULLY realizing that the most combustible and yet the most important item in any office building is the file, designers of the equipment shown at this stand have put the emphasis on fire protection.

The *Model* 5219 safe cabinet on display was tested under considerable heat to ensure certified protection for all the papers contained in it. The special steel, reinforced monolith constructed insulation also makes the cabinet resistant to water, impact and burglary.

Another protective unit made by this company is the ledger *Safe-Cabinet,* specially constructed to house accounts entered on the vertical visible system. The standard file trays fit easily into the cabinet—each unit surrounded by air.

These units are attractive in appearance and have fully functional interiors. The *Safe-Cabinet* has lockers, shelves, plan-drawers and other fittings which will accommodate all types of business records.

Milners B Series Safe.

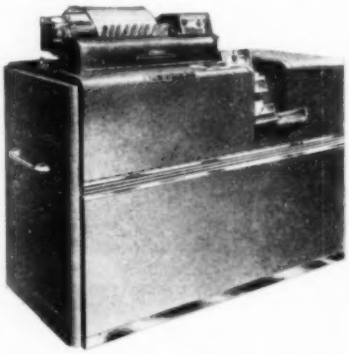
PUNCHED CARDS AND ANCILLARY EQUIPMENT

Continued from page 146

Powers - Samas Accounting Machines (Sales) Ltd. Stands 67 & 70.

ALL three ranges of Powers-Samas equipment are being displayed and demonstrated on this company's two stands. The three sizes of punched card equipment are the *Powers-One* 21-column small card; the recently introduced *Powers-Forty* 40-column medium card, which has increased card capacity, sorting speed and alphabetical printing capacity; and the Powers-Samas 65-130 large card.

Several new developments are to be seen including the *Sales Recorder,* which automatically produces a sales ticket, detail strip



The IBM punched card accounting machine.

and a *Powers-One* punched card simultaneously. The *Mark Scanning Punch* provides an improved method by which simple markings on a card are automatically converted into punched holes.

Another interesting development is the *Mechanical Ready Reckoner,* which senses certain factors in a card and then selects and punches into the same card the pre-determined amount in sterling.

Lastly among the newcomers is the *Tape-Card* punching machine, which will automatically produce punched cards from a perforated tape.

..statements out quicker.. YOUR money in sooner!

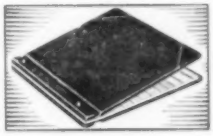
—that's logic and possible with the Twinlock Ledger Posting Systems.

Statement, Ledger and Day Book records are produced simultaneously and the end of the month statements are ready for immediate mailing.

May we send details?

Aligning Statement, Ledger and Day Book Records for posting.

Statements and Ledger Cards housed in Posting Tray.



Loose Leaf Binder housing Day Book Sheets.

Twinlock SYSTEMS

Twinlock 3 IN ONE LEDGER POSTING SYSTEMS

PERCY JONES (*Twinlock*) Ltd., 37 Chancery Lane, W.C.2. *Tel: CHAncery 8971*

BUSINESS EFFICIENCY EXHIBITION
Empire Hall, Olympia
A selection of Milners equipment can be seen at STAND No. 86

STRONG RELIABLE EFFICIENT

The name MILNERS has become synonymous with SECURITY—MILNERS SAFES and STRONG-ROOMS have earned a world-wide reputation for soundness of construction and reliability.

That same craftsmanship is embodied in MILNERS STEEL EQUIPMENT. Sensibly designed for its purpose, good to look at, it promotes efficiency in your factories and amongst your staff.

With MILNERS STEEL EQUIPMENT you get not only security, but long and efficient service for many years—it's a MILNERS tradition.

STEEL MILNERS EQUIPMENT

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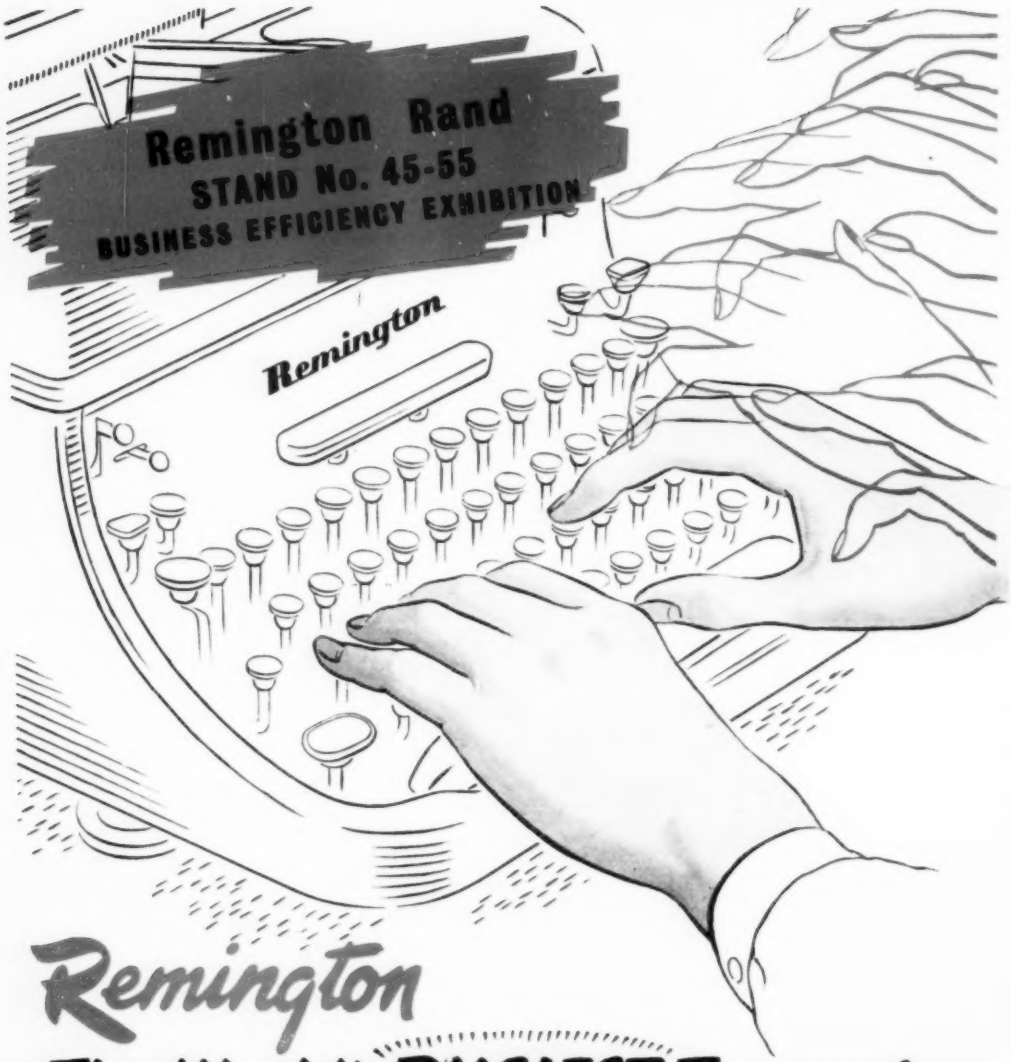
Telephone: CENtral 0041/5. *Telegrams:* Holdfast, Cent, London.
Factories: Phoenix Works, Speke, Liverpool. *Telephone:* Hunts Cross 1281/6.



Remington

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Remington Rand Limited

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Typewriters

Bar-Lock Typewriter Co. Stand 2.

FIVE carriage lengths—from 11in. to 28in.—are all interchangeable on one base of the Bar-Lock typewriter shown at this stand. Like the platen, they can be instantly removed when necessary.

This 90-character machine has a newly designed margin stop, visible ribbon colour and stencil indicator, tabulator clearing from the keyboard and quiet carriage return. The typebar and sub-lever keyboard, ribbon mechanism, paper carriage and base are each constructed as a separate unit.

British Olivetti Ltd. Stand 47.

THREE typewriters — electric, standard and portable are being featured by British Olivetti at this year's exhibition. The standard machine is the British made M44 which is available in six carriage widths. Robust in construction and of clean appearance, it has a smooth and precise action. The sharpness and clarity of the type make it particularly suitable for stencil cutting work.

The electric machine is the *Lexikon* model. With this machine complete uniformity of the typed impression is assured, regardless of variations in the typist's touch. For multi-copy work, the stroke can be adjusted to enable a large number of legible carbon copies to be produced.

The neat *Studio* portable machine is equipped with automatic tabulator setting and clearance, automatic paragraph indentation and three-position line spacing. It is supplied with an attractive carrying case.

British Typewriters Ltd. Stand 52.

SMALL and light enough to be easily carried about in a brief case, the *Aristocrat* portable typewriter weighs only 8¾lb. Although no higher than a conventional box of matches, it has many features usually found only on the larger machine.

The full size four-bank keyboard produces a writing line of 92 characters and will make up to six clear carbon copies at one writing. The all steel carrying case is fitted with press button locks and a retractable handle.

The Hermes 2000 typewriter

B.T.L. Office Equipment Distributors Ltd. Stand 52.

NEW to the B.E.E. and new in design, the *Hermes Ambassador* demonstrates the advantages of a combination electric and manual typewriter. The line spacing and carriage return is electrically controlled, yet the keyboard is manually operated like a conventional machine.

Carriage return is effected by a slight pressure on a key, and paper is inserted and ejected by the single movement of a special

Above, the Remington electric.
Left, the Imperial Portable 3.

TYPEWRITERS

lever. In case of power failure, a manual line space lever is provided Further attractions of this fast and silent machine are the well-finished keyboard; attached shorthand notebook holder; bottom-of-page warning device; and combined automatic and decimal tabulators.

The *Hermes* 2000 light, semi-portable office typewriter, also on display at this stand, features lightning automatic margins, a key-set tabulator and touch adjustment.

Imperial Typewriter Co. Ltd. Stand 10.

A CONSIDERABLE variety of work can be typed on the *Model* 60 standard office typewriter, available with type units for every commercially used language and carriage widths from 12in. to 26in. The interchangeability of the machine results from the easily removable type unit, carriage and platen roller.

Left and right-hand Quickset margins, which are easily adjusted by a touch of a lever, are included on the machine.

The *Portable* 3 is a 92-character keyboard machine with Quickset margins, full typing visibility, and smooth-running carriage. It is equipped with an attractive carrying case. Also shown are the *Good Companion* and *Good Companion Model T* portable machines.

International Time Recording Co. Ltd. Stand 41.

CORRECT letter spacing and perfect uniformity of impression enable the typist to produce high quality work on the IBM standard electric typewriter. The first electric typewriters to be assembled in this country, these machines are "premiere" exhibits at the B.E.E.

Carriage return, tabulation, back spacing and shifting for capitals are all-electric operations and are handled from the keyboard. A uniform type impression is obtained irrespective of the operator's touch.

The *Executive* electric model on display is designed—like the other

Royal Electric typewriter.

models—so that the correct amount of space is given to each character according to its width. This machine also has an all-electric keyboard. Adjustable platen for multiple copy control (up to 20 copies), keyboard control of margins and automatic line lock and reset are standard features of these machines.

Oliver Typewriter Mfg. Co. Ltd. Stand 49.

TYPE bar action on the *Model* 21 is designed to yield rapid and hard hitting contact between

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There is nothing unusual about this—for Royal is the preferred typewriter in every business throughout the world. Everyone who types knows that for speed, ease of operation, clarity and reliability, there is nothing to equal a Royal. Every machine is backed by the efficient Royal service, to ensure that this outstanding product is always kept on the job, never causing bottlenecks. Until new Royal typewriters are available, this service awaits your request.

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MODEL 60

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Imperial typewriters are the outcome of nearly 50 years manufacturing experience and research. They combine all that is best in British engineering; sound design, the use of best materials and fine precision workmanship. That is why they are in such great demand all over the world.

Imperial Typewriters

See them demonstrated on Stand K.10 at the Business Efficiency Exhibition

Imperial Typewriter Co. Ltd., Leicester

Continuous Stationery Machine for the typing of invoice sets in continuous form.

Address Stencil Machine for the typing of address stencil cards.

Special Purpose Typewriters for the typing of receipts, cheques, etc. in single or continuous form.

TYPEWRITERS

type face and platen. This feature eases typing of stencils and carbon copies.

Further specifications of this machine include the three or five line spacing device, personal touch adjustment lever, key-set or hand-set tabulator, ball-bearing standard keyboard and single-action shift keys.

The portable machine on display is light-weight (13 lb.) and compact with a ball bearing carriage and a four bank 88-character keyboard.

Remington Rand Ltd. Stands 45 & 55.

A NEW device which frees jammed type bars at the touch of a key—the *Key Trip Lever*—is one of the attractions, together with the keyboard margin control key, of the new *KMC* standard typewriter.

Also made at the Scottish factory of Remington Rand, Ltd., is the portable machine displayed on their stand. It is a light-weight and compact unit embodying all the main features of a standard office machine.

With electrified type bar action and line spacing and carriage return, the modern electric typewriter being shown by this company produces letter-perfect and uniform originals.

Royal Typewriters. Stand 82.

TYPING with power is the attraction at this stand. On view at the B.E.E. for the first time, is the new Royal electric typewriter which retains the standard keyboard but includes many new features—plus power.

Olivetti Lexikon electric typewriter.

An exclusive touch adjustment is incorporated in the design of the new machine. This feature allows the typist to make quick adjustment from manual to electric operation. All keys drop exactly the same distance when depressed and an automatic underscore and safety switch are included.

Like a standard model to use, the new Royal portable is equipped with *Magic Margin* setting, built-in space bar, improved touch control and full-size keyboard. A wide selection of type-faces is available and either the *Quiet Deluxe* or the *Arrow* models can be obtained with a special keyboard.

The *Gray Magic* standard typewriter is also displayed.

T.S. (Office Equipment) Ltd. Stand 21.

AVAILABLE with a new small type giving 18 letters to the inch, the *Everest* standard and

Continued on page 170

Before you decide..

When you are considering typewriters, be sure to see and try the HERMES before you decide. Here is a machine, modern in design and finish, made in Switzerland to standards of precision for which the Swiss are world famous. The HERMES provides every mechanical feature you can wish for. Yet it is so exceptionally quiet and light in operation that fatigue is reduced to a minimum. Speed is increased by the fact that all settings and adjustments are easily made *from the front*.

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TSW1

Unit Conditioners Give Atmospheric Control — by Department

By BARTHOLOMEW COLLINS

The ideal in atmospheric control is to give each department its own kind of air. It has been achieved in practice by a new range of units which promise to effect great changes in the operation of air conditioning systems.

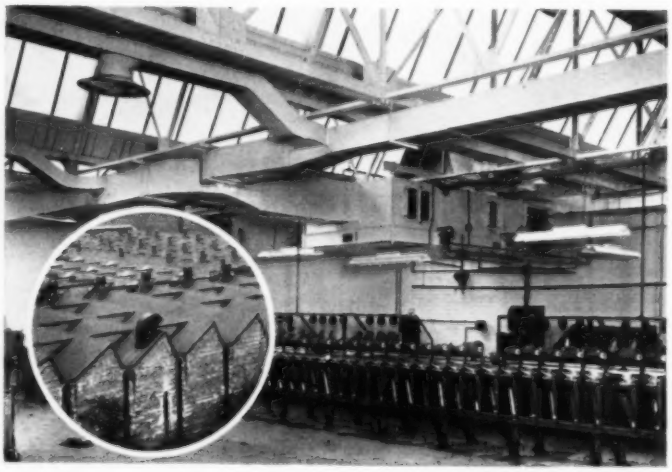
THE atmosphere of a factory has a direct influence on production. If it is too hot or too cold, too dry or too humid, it will certainly reduce the efficiency of the workers. It may also effect the quality of the goods. Thus in many modern firms air conditioning is an essential service "laid on" like gas or electricity.

Most air conditioning systems, however, depend on central treating plants which must necessarily dispense the same kind of air to all departments. Air is thus put into the foundry at the same temperature and humidity as into the pattern shop.

The central treating plant may involve two more difficulties. One is loss of thermal efficiency through the use of large quantities of ducting. The other is installation; many plants are so large that they require separate buildings.

A new system of air conditioning has recently been developed which will supply air adjusted to the specific requirements of each department in respect of temperature and humidity. It has already been installed in a number of textile works in the north of England, including that of Henry Lister & Sons, Ltd., of Troydale, near Leeds.

The system consists of units small and light enough to be hung on a wall or ceiling. Thus one unit (or series of units) can serve the needs of its own department without using valuable floor space, while structural alterations are kept to a minimum and no building is involved.



Natural lighting is virtually unaffected by this installation at Troydale Mills. Inset: fresh air ducts for the new weaving shed.

The incoming air passes through filter panels meshed with glass fibres to remove dust. The clean air then passes to copper heating tubes which warm it to the minimum temperature necessary to contain a predetermined amount of moisture.

From the heaters the clean warm air passes to specially designed capillary cells, where it comes into contact with fine films of moisture on glass strands in capillary cells. These strands are intended to ensure the maximum liquid-to-gas contact, to obtain complete air saturation as well as to remove any residue of dust and spores that may have passed the filter panels.

The water-treated air now passes over a further system of heating tubes to ensure not only the required humidity but also the required temperature. With the temperature finally adjusted, the air is ready for dispersal through fans,

internal ducting and diffusers which eliminate draughts.

The new conditioners circulate only one sixth the amount of water needed by older machines. The pressure required is one fifth of the former figure, and the saving in horsepower is put at 90 per cent. Once a unit has been installed, running costs are fairly light and the only parts needing frequent replacement are the filter panels.

In a textile factory like Lister's the filters need changing about once in three months because they become loaded with fibre particles and minutiae generated by the movement of cloth and yarn. Obviously the filters in an office installation would need to be replaced much less frequently.

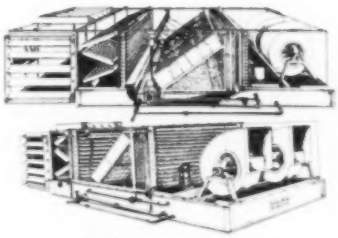
Other parts such as fans and motors can be replaced as necessary with standard spares. General maintenance is not a heavy item. Even in a large factory, a few hours per week from one man would be sufficient to look after the whole air treatment system.

The installation at Troydale Mills includes six units in the weaving shed. Weavers are conservative by tradition, but those who have experienced the effect of the units admit that conditions are much more pleasant than they used to be. Up to last year, weavers boiled in summer and froze in winter. Now they enjoy an even temperature all the year round, and what is perhaps even more important—they breathe clean air.

General view of No. 3 plant in the new section.

Although it is too soon to give any figures, the general manager of Lister's believes that the new system will help to raise production. Workers who are happy and healthy are likely to be more efficient than those who are less fortunate, but quite apart from this certain technical advantages should follow from the installation.

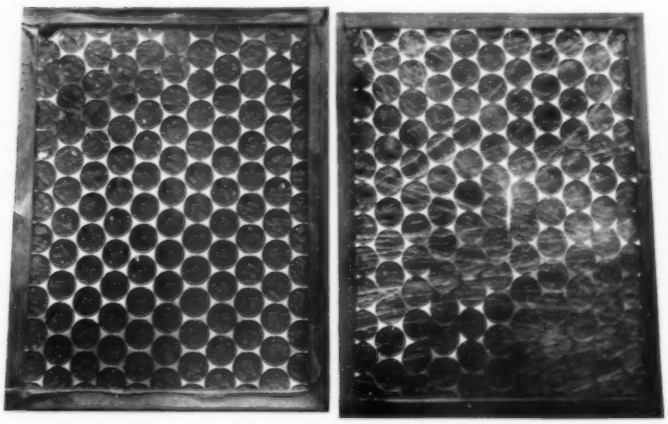
Up to now controlled temperature and humidity has rarely been attempted in woollen weaving sheds. The new conditioners offer many advantages not previously possible with a central unit. Varying conditions of control may be desirable in, say, spinning and finishing departments and, if so, the unit system should prove advantageous to all sections of the textile industry.



Mechanical views of the new conditioners.

At Lister's the only teething troubles experienced in the working of the units have been put down to vegetable matter in the water going through the machines. This water comes from the factory's own well and so the problem is not likely to occur anywhere else.

Outside Lister's no difficulties have been encountered, and the units are expected to find as many applications outside as inside the textile industry as well as being applicable to the office.



Two close-ups of preliminary air filters showing (right) a clean filter, and (left) a dirty filter with atmospheric dirt covering the glass strands.

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Survey of Modern
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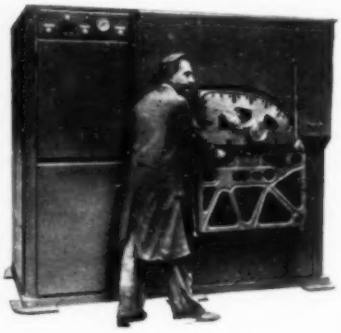
PROCESS EQUIPMENT

High Speed Welder

THE spot welding position of a high-speed production line could be readily filled by a recently developed multiple resistance welding machine. Able to produce 200 spots in 30 seconds with a power supply of 250 k.v.a., the machine is a highly complex automatic unit using pneumatic, hydraulic and electrical principles.

It is adaptable to any fast, high



output production process requiring a large series of spot welds.

A compound method of operation is used whereby the actual welding force is applied by hydraulic means. Primary current to the multiplicity of welding transformers is controlled electronically by means of ignition valves.

—(*Enquiry Ref. No. J* 51/12.)

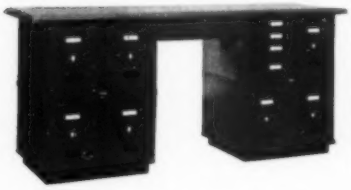
GENERAL EQUIPMENT

Removes the Fumes

FOR extracting harrassing, dangerous fumes from soldering, brazing, welding and chemical operations, etc., the *Pyrobit* fume extractor utilizes heat emission of the work-bench electric lamp.

A combined ventilation and work-illuminating appliance, this new equipment comprises both an

This is something really new in office equipment. We supply cabinets which fit any record cards or sheets whatever the size. They can be built up or added to from time to time to form always a complete and convenient business unit of clean and immaculate design. There are fifteen different stock sizes which are all interlocking and can form any combination to cover all requirements for filing in cabinet form or desk assemblings as below.



Whether for shop, store, works, accounts, sales or general office, Amselock unit will solve any problem.

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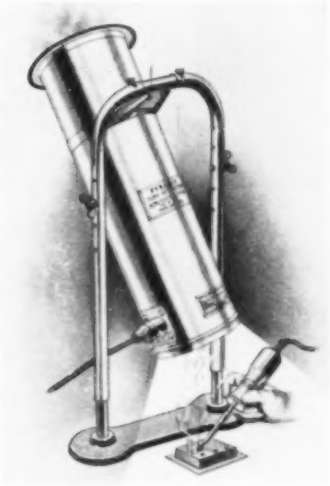
Demonstrations are given and sales visits are arranged.

air duct and a means of illuminating the work in progress. The heat generated by the lamp creates chimney-like conditions which withdraws fumes to the "free" area above the worker's head.

The device will stand on its own base or may be screwed to the



bench or wall. Height or angle of the funnel can be adjusted to suit any kind of work up to two feet high. Dimensions are: length of funnel, 24in; diameter of funnel, 6in; total weight, 11lb.

—(*Enquiry Ref. No. J.51/13.*)

MACHINERY

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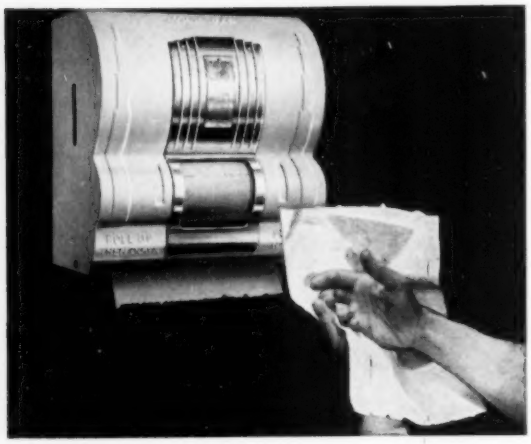

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In the Office, Better Seating Means More Output

The top executive should ensure that his personnel manager does not overlook the health and working efficiency of his office workers. For example, correct chairs are just as important to clerks and typists as they are to men and women in factories.

PRODUCTIVITY in the office depends on good seating as well as good machinery. Bad seating means low output through time being consumed in combatting fatigue. Incorrect posture and unsuitable chairs add to normal fatigue, and mean that the worker must stop work more often.

Muscle pains resulting from monotonous work — medically known as myalgia—have recently been the subject of an investigation by Dr. Arvid Lundervold of Oslo. Dr. Lundervold conducted a number of experiments in which he measured the use made by office workers of the most important muscles in the arm and back.

This was done while the girls were typing, the movements of their fingers being registered photographically. The workers who took part in the experiments were both experienced and inexperienced typists. They adopted various working positions and used chairs and tables of different types and heights.

To judge from the information obtained these muscle pains are not due to over pressure of work. The strain on the muscles is more likely to be connected with a wrong working-position or an incorrect method of work.

Surprisingly, the experiments demonstrated that the usual upright sitting position is quite exhausting for the back muscles and therefore tiring. A slightly relaxed position of the back, on the other hand, can be maintained for a long time without using the back muscles and is therefore less tiring.

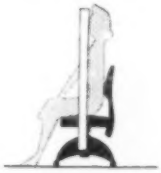
The back should be supported, in the lumbar region, with a firm—not springy — back rest. An ordinary dining room chair with a straight back is preferable to a chair with a springy back support. No direct connection can be shown between the body height of the worker and the height of the chair, as long as the worker sits on the chair in the right relation to the height of the table and works with both feet planted firmly on the floor.

Too many people work in a strained position with hunched shoulders and strained muscles, often because they are working under a certain amount of strain. Workers need practice and adequate instruction in the correct posture for sitting and writing, as this is helpful for back and arm muscles.

Other factors leading to bad working positions include inadequate training in typing, bad lighting, continuous and loud noise, and it should be remembered that there are some people who are more addicted to muscle pains than others. They should, therefore, be dissuaded from attempting work that encourages this type of disability.

Dr. Lundervold's conclusions obviously imply that great care must

Correct height from the floor gives a comfortable leg position.



The worker should sit upright but not strain to do so.

Back support must be given in the lumbar region to counteract fatigue.

The arm rest must not be so high that it hinders the free play of the arms.

Sit up close to the back of the chair to balance the body.

be taken in the choice of office chairs.

The right way to sit

(1) It should be possible to raise or lower chairs and tables to suit the height of the worker. The right height means that both feet should rest firmly on the ground, with the legs stretched slightly forward and the hollow of the knees free from the edge of the chair.

The height of the seat from the floor should be the distance from the heel to the underside of the thigh when the thigh is horizontal and the lower leg perpendicular—with the addition of about two inches. A footstool should be used if the table or desk is too high.

If the chair is too high, the edge of the seat will press on the nerves and muscles in the hollow of the knees and cause cramp in the legs and feet. A high chair will also cause the knees to press against the under-side of the table with consequent discomfort and hard wear on the clothes. If the chair is too low it will result in an uncomfortable leg position and constant muscle strain caused by leaning forward to work.

(2) The centre of gravity of the body must be balanced to rest correctly on the seat of the chair, which should be shaped and upholstered to encourage an upright position with the backbone straight but unstrained. If the back support is in the wrong position it will cause the worker to lean over and strain the back, shoulder and throat muscles. The support must be given where it is most important for the backbone and back muscles, namely in the lumbar region. The back rest and seat must not see-saw backwards at the same time, otherwise the feet will be forced up from the floor and there will be pressure in the hollow of the knees.

(3) If possible staff should be able to *remain* seated at their work, even if they have to move sideways a little to use equipment.

Choosing a chair

Features of a good working chair are therefore as follows:

(1) The seat is pivoted. It can be moved up and down and fixed at the required height. Whether or not it is upholstered, it has a well rounded edge and supports the whole of the workers' seat.

(2) The chair has four solid legs and stands firmly even if the seat is revolved.

(3) It has a firm back rest which is adjustable but free from vibration. The rest gives support in the lumbar region throughout the working day and not only during periods of rest and relaxation.

(4) Both seat and back can be adjusted while the worker is still seated.

(5) If the chair has arm rests, they should not be too high for the elbows to rest on them naturally and they should not hinder arm, shoulder and body movements.

Castors are not particularly desirable, and upholstery is not important from the point of view of health.

(The illustrations on page 163 are by Courtesy of the Danish magazine "ERHVERSLIV".)

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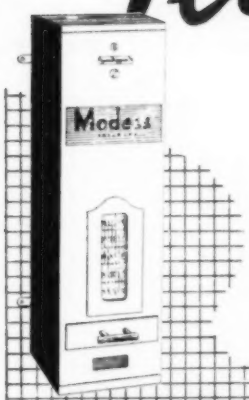

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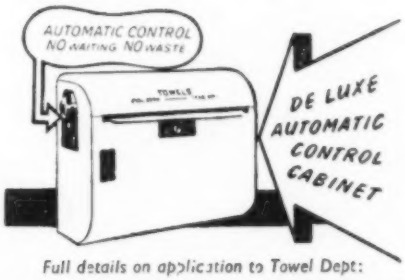

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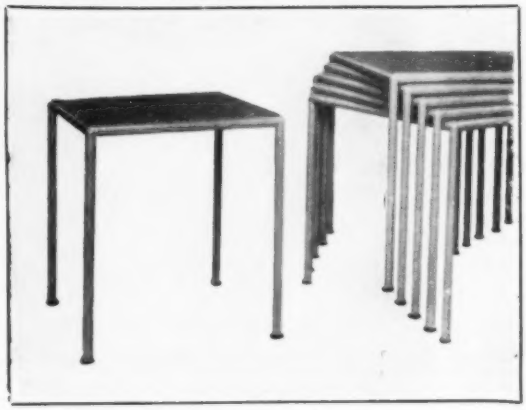

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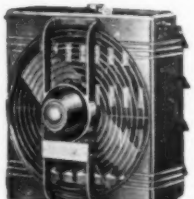

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for operation by Steam or Hot Water.
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Unit Heaters

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London Office: Honeypot Lane, Stanmore, Middlesex

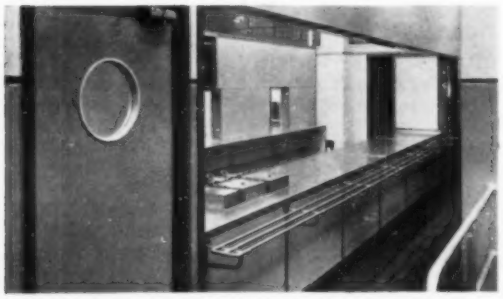
The good old days? This is the Cricklewood Garage canteen as it was in 1911. Good of its kind, it would not do to-day.

If the danger of infection is to be avoided, high standards of cleanliness are essential in canteens. This was revealed by the Catering Trade Working Party. Canteens described in BUSINESS are always chosen for their attention to hygiene. This month we prove it in pictures by re-visiting London Transport. Next issue: Babcock & Wilcox Ltd.

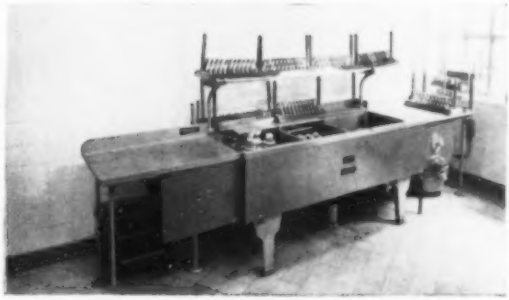
How modern equipment ensures canteen hygiene

When the Vauxhall canteen was built in 1950, "twenty-to-one" combined tables and chairs were put in to keep the floor clear for cleaning.

Walls and ceilings must be clean, as well as floors. At Baker Street, tiles are easier to maintain than paintwork.



The servery must be spotless. This one at 55 Broadway has a stainless steel top. The panelling at the front is Wareite. All easy to clean.



Clean crocks are a first essential. This machine at 55 Broadway washes about 2,000 pieces an hour. Note the tiles, which are not confined to the "front of the house."

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ENQUIRIES INVITED FOR SOLE AGENCIES.

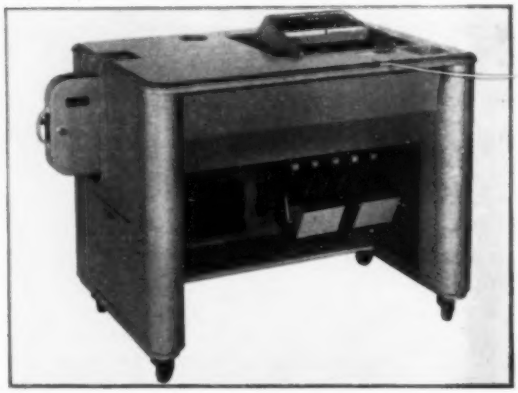
PRINTING, COPYING AND DUPLICATING EQUIPMENT

Continued from page 142

The *Policy* duplicator is being shown for the first time at an Olympia Business Efficiency Exhibition. Despite the large size of paper taken, the machine gives even inking to all parts of the work without any adjustment being necessary. Headings, totals, etc., can be emphasized in a second colour, the change taking only 20 seconds.

Another interesting exhibit is the new electronic stencil process, exclusive to Roneo. This process is similar to picture transmission. The original and the blank stencil are placed on revolving cylinders. Then a ray of light scanning the original activates an electric current, making the necessary perforations on the stencil to allow the passage of the ink when duplicating copies.

No screens or tints are employed, and the result is a continuous tone effect which gives a realistic reproduction of the original whether this is a photograph, drawing or piece of printed matter. The stencils are completed in as little as 20 minutes.



The microfilm recorder being shown by Burroughs.

Rotaprint (Kaye's) Agency Ltd. Stand 74.

THREE fully automatic *New British Rotaprint* printing machines are shown on this stand. All of them incorporate the exclusive *Rotafount* automatic damping. The *R/70 Office* model is based on the well-known *R/KL* machine but has many improvements and refinements, both in appearance and performance. It takes paper up to 14in. by 9in. and has a speed of 4,000 copies an hour. The inking is automatic and the *Rotafount* damping system eliminates the use of damping rollers.

The second machine in the range is the *R40 Popular* model, which produces high quality single and multi-colour half tone work, expansive solids, and anything that an orthodox litho machine will produce. Finally, there is the *R.30* Super model.

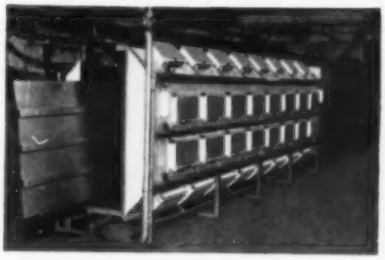
Infra-red DRYING

CUTS YOUR COSTS 2 WAYS –

FIRST Drying takes minutes instead of hours—compare the times shown in the panel alongside.

SECOND Valuable factory space is not taken up by large cumbersome ovens. Potterton infra-red gas-fired units can be arranged in almost any shape of tunnel to fit your normal production line. Result —a saving in space, time and handling . . . which all mean money! Write for full details showing how Potterton Infra-red Equipment can cut *your* costs.

Article	Convection Time	Potterton Time	Time Saved
Agricultural Machinery ...	60 mins.	8 mins.	52 mins.
Toy Scooter Parts ...	60 mins.	6 mins.	54 mins.
Cycle Frames	45 mins.	8 mins.	37 mins.
Metal Window Frames ...	45 mins.	5 mins.	40 mins.
Petrol Pump Castings ...	60 mins.	12 mins.	48 mins.



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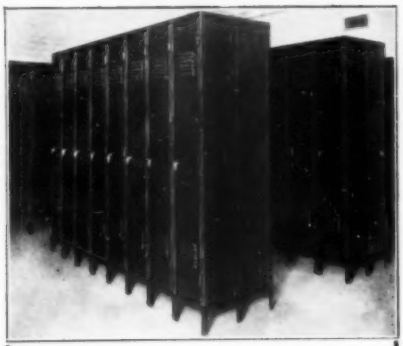

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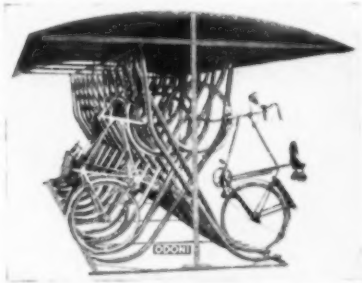

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FILING SYSTEMS AND EQUIPMENT

Continued from page 118

tion so that removal or replacement of the interior files is the work of a few seconds. The chassis is available in foolscap or quarto size and the pockets are complete with suspension guide, title strip and celluloid protector.

A wide range of flat files, pockets and covers are available with other filing equipment including collators, sorters, and plan files.

The Trade Loose Leaf Co. Ltd. Stand 94.

WHETHER the problem is stock control, staff records, sales analysis or the filing of documents for future reference, the principle of visibility is more and more generally recognised to be the answer. This is brought out on the stand of The Trade Loose Leaf Company, whose products are marketed under the trade name of *Guidex*.

First and foremost is the *Guidex Merlin* visible filing system, in which the various pockets have titles arranged in one line on a horizontal plane in strictly alphabetical order. These pockets are easily coupled together so that they cannot get out of order. Moreover, every pocket can be expanded at will so that the extra bulky file is easily accommodated.

[Another interesting exhibit is the *Everyman* book unit, which provides a visible arrangement for use where records are few in number but nevertheless important. The book goes easily into the executive's drawer, and is therefore particularly well suited for records which are semi-private. Records are kept on 8 by 5 cards secured in overlapping celluloid edged pockets.

On the loose leaf side there are the *Falcon* and *Eagle* visible record books with visible edges. There are also several standard forms, including feint ruled, ledger ruled, personnel record, commodity sales record, etc.

REVIEW OF EXHIBITS

TYPEWRITERS

Continued from page 156

portable typewriters on this stand are ideal for statistical work. Made in Italy, their features include the half-line spacing device.

Underwood Elliott Fisher Ltd. Stands 19 & 32.

THIS year, Underwood are showing a new typewriter which is being produced at their Brighton factories. The machine retains all the fundamental time-tested characteristics of Underwood, and also incorporates many new features. On the correspondence model there is a full 10in. writing line, whilst the interchangeable platen for varying copy work is another feature.

Other points of interest are the improved paper table, lateral guide, platen knobs, a variable line spacer to facilitate form handling and rapid aligning and a revised drop line space lever.

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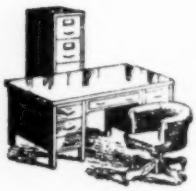

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Continuity of Towel Supply guaranteed.

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Full particulars from—

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How 10,000 Festival exhibits were moved

Continued from page 54

The work of recording these actions went on side-by-side with them. Progress cards were kept in a visible *Roneodex* index filed under exhibitions, sections and sub-sections and in numerical order of exhibits.

A green transparent plastic signal which could be moved along the bottom of the progress card showed at a glance first the progress of the history sheet and later of the exhibit itself through the stages of loan agreement or contract (LA/C), calling forward to warehouse or site (CF), dispatch to the site (DI), and final withdrawal when the exhibition is closed (WI). A red signal called attention to anything needing special attention and a yellow signal to a contract exhibit.

On the supplier's card the exhibits from any one supplier were set out in columns, with a separate column for each section of the exhibition and a separate column for each contract exhibit.

Each firm's loan agreement and correspondence connected with it were filed in the numerical order of the loan agreement or contract number.

Avoiding Too Much Recording Work

Commenting on the whole system Col. Beddington said: "From a procedural point of view our main problem was to avoid too much recording. And one specific problem was to evolve a method by which the typist could be provided with the information to type both the schedule of exhibits and the calling forward notice at the same time. This was solved by typing one from the other—underlining in blue the parts on the schedule of exhibits which we wanted typed on the calling forward notice, and stamping on any additional information with a rubber stamp."

The system ran so smoothly that it was possible to tell in two minutes, the stage reached by any exhibit on its progress from supplier to final exhibition display.

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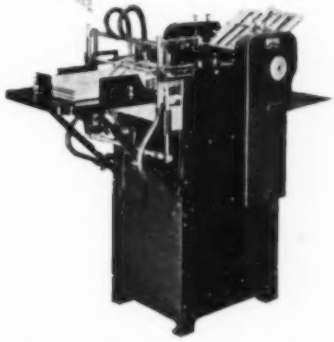
See these machines—and the Unifold Inserta which folds and inserts documents in envelopes, at the Business Efficiency Exhibition, Olympia.

Stand No. 90. June 6th to 16th



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P.S. The industrial uses of 'TRAPINEX' are limitless, so why not consult us? Very little is impossible—it just takes a little longer.

USERS INCLUDE

AUSTIN MOTOR CO, BERGER PAINTS, BOAC, CADBURYS, CHERRY BLOSSOM, DAILY EXPRESS, DUNLOP, FRIGIDAIRE, GEC, GILBEY'S WINES, HOOVER, HORNIMANS, HOVIS, ICI, IDRIS, KIWI, LEVER BROS, MARS, MELTONIAN, MURPHY RADIO, NUFFIELD ORGANISATION, NUSWIFT, OSRAM, PHILLIPS' RUBBERS, REMINGTON RAND, RUFFLETTE, SEBELS', SMITH'S CLOCKS, W. H. SMITH, VACUUM OIL, WM. WREN LTD, etc., etc.

RESEARCH AND ADVICE

The services of the 'TRAPINEX' Research Laboratory, Designers, and Planners, are at the disposal of all potential users of the 'TRAPINEX' method.

ON THE SURFACE

It may be an operating instruction on some remote bit of machinery; an identification mark on some novel plastic pack; a publicity idea beyond the scope of printing and too expensive for hand-painting. But whatever it is, 'TRAPINEX' usually provides the answer. In fact, 'TRAPINEX' does not often meet a marking problem to which a ready (and economical) solution cannot be found. Write to the address below giving specimens if possible—there's no obligation of course.

WHERE YOU LIKE!

'TRAPINEX' can put your name anywhere, whether it be on a retailer's window, on vans or trucks, on buses and in tube trains, on your containers, on packs or on the product itself. The tenacious 'TRAPINEX' Paint Transfer reproduces nameplates, designs, devices and trademarks, slogans, warnings, etc.

All colours of the rainbow (and a few of our own) are easily and effectively reproduced, no design is too intricate and no job too large. There are few surfaces for which the 'TRAPINEX' laboratory hasn't yet perfected the ideal transfer that will give fully satisfactory results.

SO EASY TO APPLY

The application of 'TRAPINEX' Paint Transfers is simplicity itself and can be carried out by totally unskilled labour. A special Fixing Service for shop windows is available throughout the U.K.

INTERESTING OFFER

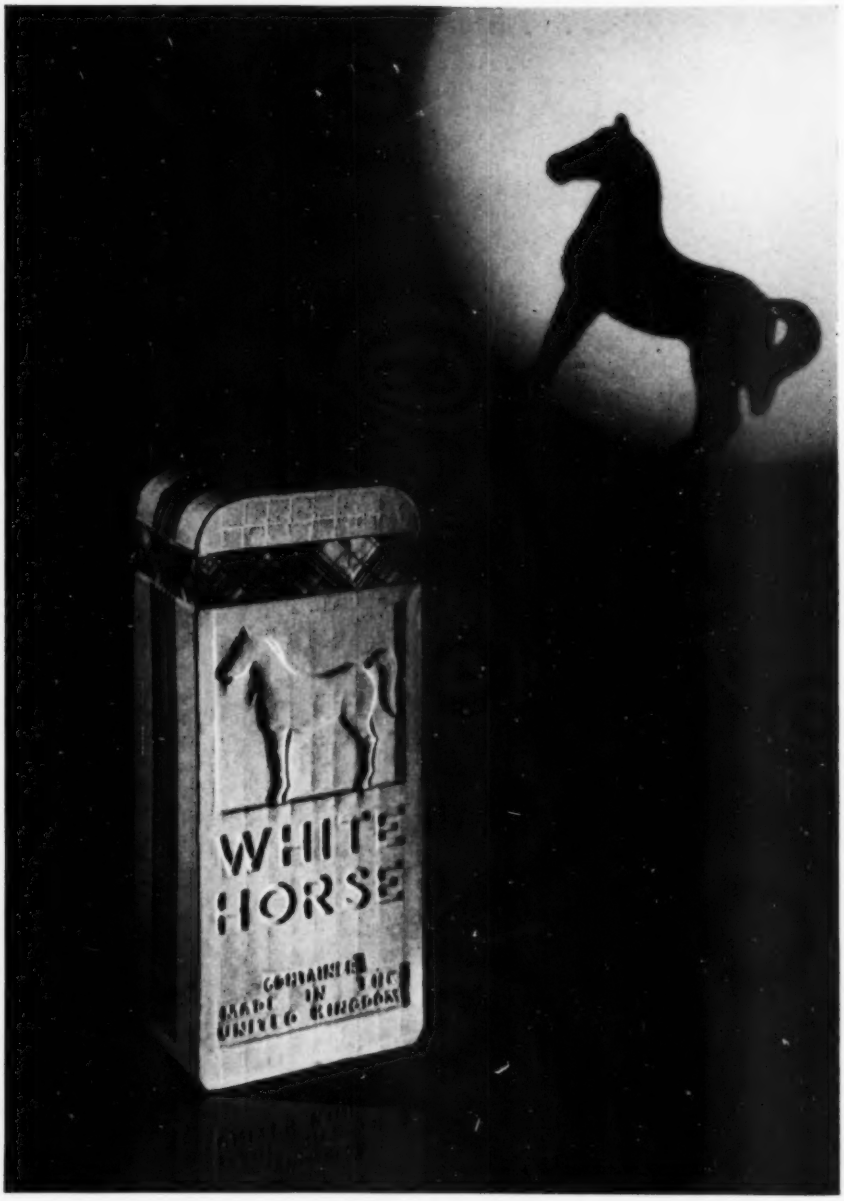
There is a very interesting little booklet, which is yours for the asking, dealing with the many uses of 'TRAPINEX.' We should be pleased to send you a copy and to help you, to the best of our ability, with any of your marking problems.

Trapinex (Regd) Paint Transfers are fully patented and manufactured only by:—

TRAPINEX LTD, 105 COMMERCE HOUSE, HIGH RD, LONDON N.22

TRANSFER MANUFACTURERS AND DIRECT PROCESS PRINTERS

Phone; Bowes Park 6911/3 Grams: Trapinex, Wood, London Cables: Trapinex, London



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